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*TESTIMONY - LESSER*

**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of	)	
Columbus Southern Power Company and	)	
Ohio Power Company for Authority to	)	Case No. 11-346-EL-SSO
Establish a Standard Service Offer	)	Case No. 11-348-EL-SSO
Pursuant to §4928.143, Ohio Rev. Code,	)	
in the Form of an Electric Security Plan.		

In the Matter of the Application of	)	
Columbus Southern Power Company and	)	Case No. 11-349-EL-AAM
Ohio Power Company for Approval of	)	Case No. 11-350-EL-AAM
Certain Accounting Authority.	)	

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**DIRECT TESTIMONY OF**

**JONATHAN A. LESSER, PH.D.**

**ON BEHALF OF**

**FIRSTENERGY SOLUTIONS CORP.**

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**PUBLIC VERSION**

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**I. INTRODUCTION, PURPOSE AND SUMMARY OF CONCLUSIONS**

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

A. 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.

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

A. I am an economist with substantial experience in market analysis in the energy industry. I have over 25 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, 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.

1 I hold MA and PhD degrees in economics from the University of Washington and  
2 a BS, with honors, in mathematics and economics from the University of New Mexico.  
3 My doctoral fields of specialization were applied microeconomics, econometrics and  
4 statistics, and industrial organization and antitrust. I am the coauthor of three textbooks,  
5 including *Environmental Economics and Policy* (1997), *Fundamentals of Energy*  
6 *Regulation* (2007), and, most recently, *Principles of Utility Corporate Finance* (2011). I  
7 have prepared economic impact studies estimating the job effects of electric generating  
8 facility construction and operation, and performed studies to examine how jobs are  
9 destroyed by uneconomic generation investments. My studies have been published both  
10 in peer-reviewed and trade journals. I have attached a copy of my curriculum vita as  
11 Exhibit JAL-1.

12 **Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?**

13 A. Yes. I am a member of the International Association for Energy Economics, the  
14 Energy Bar Association, and the Society for Benefit-Cost Analysis.

15 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

16 A. I am testifying on behalf of FirstEnergy Solutions Corp. ("FirstEnergy  
17 Solutions").

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

20 A. Yes. I testified in Case Nos. 08-917-EL-UNC and 08-918-EL-UNC, generally  
21 referred to as the "POLR Remand" proceeding, on behalf of the Industrial Energy Users  
22 of Ohio.

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

2 A. I have been asked to address several facets of the Electric Security Plan (“ESP”)  
3 proposed by Columbus Southern Power Company (“CSP”) and Ohio Power Company  
4 (“OPC”) (collectively, “AEP Ohio”). In Section II below, I discuss the mistakes made by  
5 AEP Ohio witness Thomas in calculating the competitive benchmark price for purposes  
6 of her ESP vs. MRO price comparison, including her failure to properly calculate the cost  
7 basis for the capacity component of that price. In Section III, I address the negative  
8 impact of AEP Ohio’s rate design on Ohio’s market for competitive retail electric service  
9 (“CRES”), including how AEP Ohio proposes to recover base generation revenues,  
10 allocate costs, and impose nonbypassable generation-related riders with the obvious  
11 effect of raising rates and reducing or eliminating competition in AEP Ohio’s service  
12 territory. Lastly, in Section IV, I discuss and rebut AEP Ohio’s claims of the job creation  
13 benefits of the ESP, specifically AEP Ohio’s claims that its proposed ESP provides a  
14 unique opportunity to grow the Ohio economy and create jobs, in contrast to growth from  
15 competitive markets and competitive electric suppliers such as FirstEnergy Solutions. In  
16 fact, I find that the ESP’s support of uneconomic investments will result in the loss of  
17 several thousand jobs in Ohio.

18 **Q. WHAT ROLE DOES AEP OHIO’S ESP PLAY IN OHIO’S COMPETITIVE**  
19 **MARKET FOR RETAIL ELECTRIC GENERATION SERVICE?**

20 A. The ESP is a default option – a Standard Service Offer (“SSO”) – in what Ohio  
21 has said should otherwise be a diverse and innovative market for CRES.<sup>1</sup> More than ten

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<sup>1</sup> See R.C. 4928.02(C), (D). “It is the policy of this state to do the following throughout this state: (C) Ensure diversity of electricity supplies and suppliers, by giving consumers effective choices over the selection of those supplies ... (D) Encourage innovation and market access for cost-effective supply- and demand-side retail electric service ...”

1 years ago, Ohio declared that retail electric generation and aggregation services, among  
2 others, would be competitive services in Ohio.<sup>2</sup> Ohio also directed electric distribution  
3 utilities such as AEP Ohio to offer consumers an SSO to which they always may default  
4 from the CRES market. AEP Ohio has the option of providing an SSO either through an  
5 ESP or a Market Rate Offer (“MRO”), which uses a competitive bidding process to  
6 establish the SSO price. In either case, because the SSO is a default option for  
7 consumers, the SSO either must fairly represent market pricing (the MRO) or be more  
8 favorable in the aggregate than market pricing (the ESP). AEP Ohio proposes to update  
9 its existing ESP, rather than develop an MRO. To be consistent with state policy, the  
10 ESP should give consumers unbiased choices over the selection of electricity supplies  
11 and suppliers, encourage market access for cost-effective supply of retail electric service  
12 and ensure effective competition in the provision of retail electric service. Therefore, the  
13 ESP should not unfairly harm market competition or generate market deficiencies. It also  
14 should not degrade Ohio’s effectiveness in the global economy by erecting barriers to  
15 market competition.

16 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE ESP.**

17 A. First, AEP Ohio witness Thomas’s calculation of a Competitive Benchmark Price,  
18 which she uses in an attempt to show that the ESP price is more favorable than the  
19 expected results of an MRO price, is too high, as explained below and in the testimony of  
20 Mr. Schnitzer. Not only does Ms. Thomas rely on outdated energy market prices, she  
21 also overstates the expected MRO price by relying on an inflated and unsupported  
22 estimate of AEP Ohio’s embedded capacity costs and on unsupported estimates of other

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<sup>2</sup> See R.C. 4928.03.



1 cost components.<sup>3</sup> In particular, as I explain below, AEP Ohio should not be permitted  
2 to collect any above-market capacity costs or to use above-market capacity costs as the  
3 capacity price component in its Competitive Benchmark Price.<sup>4</sup>

4 Second, AEP Ohio's proposed "market-based" rate design, by which it allocates  
5 costs to different customer classes, will have the effect of foreclosing competition in AEP  
6 Ohio's service territory. AEP Ohio customers will have a disincentive to select a  
7 competitive electric supplier and, as a result, will only select the AEP Ohio's SSO. If the  
8 Commission approves the ESP in the form proposed by AEP Ohio, it will effectively  
9 eliminate retail competition, violate Ohio's policy to encourage diversity of electric  
10 supplies and suppliers, harm consumers, and damage the Ohio economy. AEP Ohio's  
11 base generation rate, which is reflected in its Standard Offer Generation Service Rider  
12 ("GSR"), is set well below what AEP Ohio claims is its generating cost so that AEP  
13 Ohio's price-to-compare is maintained at an artificially low level.<sup>5</sup> AEP Ohio then  
14 assigns its requested average generation price to each customer class using an allocation  
15 approach that lacks any cost-of-service basis and is unreasonable. It then manipulates  
16 these rates using its nonbypassable Market Transition Rider ("MTR"), again without a  
17 reasonable, cost-of-service basis, so as to protect customer classes – primarily large  
18 commercial and industrial customers – that the company is most at risk of losing to  
19 competition. For good measure, it offers further subsidies to certain commercial and  
20 industrial customers through its Rate Security Rider ("RSR").<sup>6</sup> Lastly, it imposes on all

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<sup>3</sup> See, *infra*, Section II.A.

<sup>4</sup> See, *infra*, Section II.B.

<sup>5</sup> See, *infra*, Section III.A.

<sup>6</sup> See, *infra*, Section III.B.

1 customers, including shopping customers, a long list of charges designed to recover its  
2 generation costs that are unjustified and are impediments to competition.<sup>7</sup> This will  
3 result in yet-to-be determined rate increases and result in fewer options for AEP Ohio  
4 customers. This is not the rate design of a default offer, but of an anti-competitive offer.

5 Third, AEP Ohio is proposing to charge a much higher price for capacity to CRES  
6 providers than it will charge to default service customers under its proposed ESP. That is  
7 anticompetitive, discriminatory and improperly favors its own generation. Moreover,  
8 AEP Ohio proposes to charge CRES customers an average capacity price that is over nine  
9 times the PJM market price for capacity during the ESP period, which is patently  
10 unreasonable.<sup>8</sup>

11 Fourth, AEP Ohio, and in particular its President and Chief Operating Officer,  
12 Joseph Hamrock, is engaged in economic sophistry by claiming that the way to  
13 strengthen Ohio's economy is to guarantee AEP Ohio's cost recovery of uneconomic  
14 investments, increase AEP Ohio's revenue stream, and foreclose any and all competitors.  
15 All Ohioans will benefit from a strong Ohio economy. The way to achieve a strong  
16 economy is to create an environment that encourages, among other things, competition  
17 and economic growth, not one where the incumbent utility, AEP Ohio, is favored over  
18 competitive electric suppliers, to the detriment of customers who are burdened with the  
19 high costs of subsidizing it. AEP Ohio's proposed ESP will harm Ohio's economic  
20 growth and cost over three thousand Ohio jobs.<sup>9</sup>

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<sup>7</sup> See, *infra*, Section III.C.

<sup>8</sup> See, *infra*, Section III.A.

<sup>9</sup> See, *infra*, Section IV.

1 **Q. WHAT DO YOU MEAN WHEN YOU STATE THAT MR. HAMROCK IS**  
2 **ENGAGED IN ECONOMIC SOPHISTRY?**

3 A. Accompanying AEP Ohio's ESP application is a letter from Mr. Hamrock dated  
4 January 27, 2010.<sup>10</sup> This letter, perhaps better than any other aspect of AEP Ohio's  
5 filing, demonstrates the economic fallacies upon which AEP Ohio's entire ESP is based.  
6 Mr. Hamrock erroneously believes that the state must compel AEP Ohio's distribution  
7 customers, including those who selected CRES suppliers, to pay higher rates to AEP  
8 Ohio in order to subsidize the construction of generating facilities and virtually eliminate  
9 AEP Ohio's operational risk. In effect, he is demanding that the PUCO authorize the  
10 imposition of an economic development tax on all AEP Ohio customers—with all of the  
11 tax proceeds benefitting only AEP Ohio. Mr. Hamrock is wrong. His demand for more  
12 state regulation lacks a sound economic basis because the economic development tax he  
13 seeks to impose will reduce economic growth and destroy jobs in the state by subsidizing  
14 AEP Ohio's uneconomic investments.

15 **Q. PLEASE EXPLAIN WHY MR. HAMROCK'S DEMAND FOR MORE**  
16 **REGULATION WILL REDUCE ECONOMIC GROWTH IN OHIO.**

17 A. AEP Ohio's proposed ESP will foreclose competition and will benefit AEP Ohio  
18 at the expense of AEP Ohio's customers and the Ohio economy. The ESP should be  
19 modified so that it promotes market competition, thereby generating all of the well-  
20 recognized and documented benefits of competition, consistent with the language of R.C.  
21 4928.02(C), (D) and (H).

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<sup>10</sup> The letter is incorrectly dated, as it was filed on January 27, 2011.

1   **Q.    IS MR. HAMROCK CORRECT THAT AEP OHIO FACES UNCERTAINTY?**

2           While uncertainty is always a factor for any business, AEP Ohio’s proposal to  
3           address the uncertainty it faces does so by harming Ohio’s economy. Mr. Hamrock  
4           laments the climate of uncertainty facing AEP Ohio under the current regulatory  
5           framework. He believes this uncertainty could “lead to retirement of critical assets, an  
6           irreversible course that will leave the State exposed to tighter supplies and the associated  
7           increases in market prices.”<sup>11</sup> This is incorrect. Market economics lead to the retirement  
8           of uneconomic resources and the continued use and development of the most economic  
9           resources. In the long run, market economics will lead to lower market prices than what  
10          customers otherwise would be obligated to pay under AEP Ohio’s proposal, in which  
11          AEP Ohio’s uneconomic resources are funded by all customers.

12          Mr. Hamrock insists that, under the current regulatory framework in Ohio,  
13          “investment in Ohio is uniquely risky,” in part, because utility customers have an  
14          opportunity to choose alternative (competitive) electric suppliers. Mr. Hamrock favors a  
15          regulatory framework in which AEP Ohio’s distribution customers—not competitive  
16          electric suppliers, who are best able to manage those risks—carry all the risk of  
17          investments in Ohio-based generating facilities (as well as part of the risk of proposed  
18          research in West Virginia). Thus, Mr. Hamrock proposes that AEP Ohio be allowed to  
19          impose a host of nonbypassable riders on all of its distribution customers that will  
20          effectively foreclose them from choosing competitive electric suppliers that can provide  
21          CRES at lower rates. His underlying thesis is that eliminating market competition leads  
22          to economic growth, contrary to basic economic principles and experience. This is

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<sup>11</sup> *In the Matter of the Application of AEP Ohio*, Case No. 11-346-EL-SSO and Case No. 11-348-EL-SSO, Application, Attachment 1, Letter of Joseph Hamrock, January 27, 201[1], at 1.

1 economic nonsense. It is the threat of returning to traditional, high-cost regulation, as  
2 demanded by AEP Ohio, that will reduce economic growth and destroy jobs.

3 Mr. Hamrock is correct that investing in coal-fired power plants is risky, given  
4 uncertainty as to what, if any, regulations governing carbon emissions will be imposed at  
5 the national level. But competitive electric suppliers must address that risk, and many  
6 other risks, as well, and without the benefit of the guaranteed cost recovery that AEP  
7 Ohio seeks to have granted unto itself. Competitive suppliers are best able to address risk  
8 at the lowest cost to consumers precisely because they lack guaranteed cost recovery. If  
9 this risk is transferred from competitive electric suppliers to AEP Ohio's customers, the  
10 likely outcome is that those customers will unnecessarily become responsible for decades  
11 for the cost of uneconomic investments.

12 **Q. MR. HAMROCK ALSO BELIEVES THAT, IF AEP OHIO RETIRES**  
13 **GENERATING PLANTS AND, AS A RESULT, THE STATE IMPORTS**  
14 **ELECTRICITY FROM OTHER NEARBY STATES, THE STATE'S ENERGY**  
15 **SECURITY WILL BE THREATENED. DO YOU AGREE?**

16 A. No. Mr. Hamrock's warning against Ohio becoming a net importer of electricity  
17 from other surrounding states, arguing that this will adversely affect Ohio's "energy  
18 security," is also inconsistent with basic economics and the entire purpose of PJM. Mr.  
19 Hamrock presumes that only energy supplies produced within the boundaries of the  
20 state—and only those produced by AEP Ohio itself—can provide "energy security." Yet,  
21 based on data published by the U.S. Energy Information Administration, Ohio has been a  
22 net "importer" of electricity for over 20 years. In 2009, for example, Ohio retail electric  
23 sales were 146.3 million MWh, whereas total in-state generation was 136.1 million  
24 MWh. Thus, Ohio "imported" about 10 million MWhs of power to meet retail electric  
25 demand. In 1990, retail electric sales were 142.5 million MWh, whereas in-state

1 generation was 128.0 million MWh, resulting in electricity “imports” of 14.5 million  
2 MWh.<sup>12</sup> Thus, even if the level of “imports” into Ohio were a measure of Ohio’s  
3 security, which it is not, Ohio “imports” have decreased in the years since competition  
4 has been in place.<sup>13</sup> Moreover, although AEP Ohio now stresses the importance of  
5 generation sited in Ohio, it clearly has not always thought that to be necessary or  
6 important given that its AEP East affiliates own over 13,000 MW of generating facilities  
7 that AEP did not construct in Ohio.<sup>14</sup> However, with over 33,000 MW of generating  
8 capacity within the state, and its participation in PJM, the largest integrated power pool in  
9 the country, Ohio’s energy “security” is not threatened. To the contrary, Ohio’s electric  
10 energy “security” is assured.

11 As for AEP Ohio itself, the company’s reserve margin was almost 37% in 2010  
12 (*i.e.*, 37% greater available generating capacity than its peak load).<sup>15</sup> Moreover, even  
13 with planned retirements of generating units, AEP Ohio’s reserve margin is expected to  
14 decrease gradually to about 27% by 2015, still well above PJM’s traditional 15%-16%  
15 planning reserve requirements.<sup>16</sup> Thus, AEP Ohio actually is asking Ohio consumers to

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<sup>12</sup> Source: U.S. Energy Information Administration, Ohio Electricity Profile, Table 5 (generation) and Table 8 (retail sales). Available at: [http://www.eia.gov/cneaf/electricity/st\\_profiles/ohio.html](http://www.eia.gov/cneaf/electricity/st_profiles/ohio.html).

<sup>13</sup> Electricity is not “imported” into Ohio in the same way that, say, oranges are imported, because physical flows on high-voltage transmission lines depend on numerous system conditions. Instead, one can say that Ohio consumes more electricity than generators located within the state produce.

<sup>14</sup> AEP 2010 Fact Book, presented to 45th EEI Financial Conference, Palm Desert, CA, Nov. 1, 2010 (“AEP 2010 Fact Book”), at p. 6, 21, 60, the relevant portions of which are attached as Exhibit JAL-2, available on AEP’s website at <http://www.aep.com/investors/present/documents/2010EEIFactBook.pdf>. Close to 100 units in AEP East are outside Ohio, and 9 of OPC’s units are outside Ohio. *Id.* at p. 61-62.

<sup>15</sup> See Direct Testimony of Michael M. Schnitzer on Behalf of FirstEnergy Solutions Corp. (“Schnitzer Direct”), filed July 25, 2011, at p. 90.

<sup>16</sup> Columbus Southern Power Company and Ohio Power Company, *Long-Term Forecast Report to the Public Utilities Commission of Ohio*, Case Nos. 11-2501-EL-FOR and 11-2502-EL-FOR, April 15,

1 guarantee its generation costs so that it can use that excess capacity to provide energy  
2 security to consumers outside its Ohio service territory. Ohio's economy, which has a  
3 large manufacturing base, will benefit most from having lowest-cost electricity available  
4 to all consumers. AEP Ohio's proposed ESP is designed to deny these benefits to Ohio's  
5 consumers.

6 **II. AEP OHIO'S CALCULATION OF THE COMPETITIVE BENCHMARK**  
7 **PRICE IS FLAWED AND, IN PARTICULAR, OVERESTIMATES THE**  
8 **CAPACITY PRICE AND DOUBLE-RECOVERS COSTS**

9 **A. AEP Ohio's Competitive Benchmark Price Components Are**  
10 **Unsupported and Erroneous**

11 **Q. WHAT IS YOUR OPINION OF THE COMPETITIVE BENCHMARK PRICE**  
12 **COMPONENTS USED BY AEP OHIO WITNESS THOMAS?**

13 A. Ms. Thomas's Competitive Benchmark Price is intended to reflect the price  
14 charged by suppliers that would result from a competitive bid process under an MRO.<sup>17</sup>  
15 Ms. Thomas constructs this price out of ten components and obtains a result that is  
16 artificially high.<sup>18</sup> Ms. Thomas does not support many of the component prices she uses  
17 with data showing that they are reasonable. She claims that "[v]erifiable, publicly  
18 available information for each component of the Competitive Benchmark was used  
19 wherever possible," but she does not provide evidence of which cost components were  
20 developed using publicly available information and which were not. She further states

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(cont.)

2011 at 138-39 (retirements) and 144-151 (reserves). PJM's installed reserve margin for June 2014- May 2015 is 15.3%.

<sup>17</sup> Direct Testimony of Laura Thomas on behalf of Columbus Southern Power Company and Ohio Power Company, January 27, 2011 ("Thomas Direct"), at 4:1-3.

<sup>18</sup> Thomas Direct, at 6:14 to 8:15, 9:9-13.

1 that, “[w]here qualitative data was used, the experiences of various deregulated states  
2 were used to reflect a reasonable and balanced approach in determining an appropriate  
3 charge.”<sup>19</sup> Again, however, she does not explain what “experiences” from deregulated  
4 states were used, why they were used and not others, or why those “experiences” reflect a  
5 reasonable and balanced approach.

6 **Q. DO YOU HAVE SPECIFIC ISSUES REGARDING THE PRICE COMPONENTS**  
7 **SHE ADOPTED?**

8 A. Yes. First, as discussed in detail in the testimony of Mr. Schnitzer, Ms. Thomas  
9 uses an outdated estimate of the energy swap price, based on the average of the first five  
10 trading dates of each quarter of 2010. As Mr. Schnitzer explains, the appropriate forward  
11 prices to use are the most current ones available at the time of AEP Ohio’s filing. This  
12 error results in an artificially high Competitive Benchmark Price.

13 Second, as I discuss in detail below, the capacity prices shown in row 4 of the  
14 2012 and Jan 2013 – May 2014 tables of Exhibit LJT-1 are unreasonable, double-count  
15 revenues, seek double-recovery of costs, and do not reflect market prices. This error also  
16 results in an artificially high Competitive Benchmark Price.

17 Third, the “transaction risk adder” Ms. Thomas uses in her ESP–MRO  
18 comparison is constructed from whole cloth. Ms. Thomas states this risk adder “reflects  
19 a variety of risks that vary based on the unique profile and business objectives of an  
20 individual bidder. Examples of supplier risks include commodity price risk, migration  
21 risk, counterparty default risk and credit risk.”<sup>20</sup> How Ms. Thomas was able to estimate  
22 the value of risk to individual generation suppliers is a mystery. In her response to

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<sup>19</sup> *Id.* at 6:5-8.

<sup>20</sup> *Id.* at 8:7-10.



1 discovery request IEU INT-90 (attached as Exhibit JAL-3), Ms. Thomas states, “The  
2 amount of the Transaction Risk Adder identified on page 8 of Company witness  
3 Thomas’s testimony was based on a review of the experiences of various deregulated  
4 states and reflects a reasonable and balanced approach to determining a Competitive  
5 Benchmark price.” She then cites to various studies referenced in Attachment 2 of her  
6 response to IEU-91 and, based on these studies, somehow assumes that the value of this  
7 adder equals 5% of the market price.<sup>21</sup> However, she has no work papers showing how  
8 she settled upon the value she used as a component in the Competitive Benchmark Price  
9 and no documentation demonstrating that the value she chose is appropriate here.

10 Finally, the entire support for the \$5.00/MWh retail administration charge Ms.  
11 Thomas assumes is “As filed in 2008.”<sup>22</sup> Presumably this is a reference to AEP Ohio  
12 witness J. Craig Baker’s testimony filed in 2008. Ms. Thomas offers no factual basis in  
13 her testimony or work papers for this estimate, which is now three years old, or any  
14 reason to believe that it accurately reflects administrative costs that would be included in  
15 MRO auction results for 2012 and 2013-14. In response to discovery request IEU INT-  
16 91, she provided examples of retail administration fees, with the Ohio examples ranging  
17 from \$2.81/MWh to \$3.67/MWh.<sup>23</sup> Other than this one-page document, she lacks any  
18 work papers showing how she settled upon a \$5.00/MWh fee.<sup>24</sup>

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<sup>21</sup> Thomas Workpapers, file entitled “A 2010-11 Competitive Benchmark Pricing.xls.”

<sup>22</sup> *Id.*

<sup>23</sup> Columbus Southern Power Company’s and Ohio Power Company’s Response to IEU INT-91 Att. 1 (Attached as Exhibit JAL-4).

<sup>24</sup> Columbus Southern Power Company’s and Ohio Power Company’s Response to FES 1st Set RPD-007 and Response to IEU-Ohio 2nd Set INT-089 (Attached as Exhibit JAL-5).

1 I conclude that the assumptions underlying Ms. Thomas's Exhibit LJT-1 are a  
2 hodge-podge of outdated market prices, AEP Ohio's own costs (which are double-  
3 counted), and assumed values. They are not representative of market conditions  
4 whatsoever and thus do not provide a legitimate comparison between AEP Ohio's  
5 proposed ESP prices and the MRO alternative, as I will explain in greater detail later in  
6 my testimony.

7 **B. AEP Ohio's Capacity Cost Estimate Is Excessive, Double-Counts**  
8 **Revenues, and Fails to Properly Reflect Market Pricing**

9 **Q. PLEASE SUMMARIZE YOUR OBJECTIONS TO THE CAPACITY PRICE**  
10 **COMPONENT USED BY MS. THOMAS IN LJT-1.**

11 A. The second largest component of the Competitive Benchmark Price estimated by  
12 Ms. Thomas is a capacity price that is extremely inflated, double-counts revenues and  
13 fails to properly reflect market pricing.<sup>25</sup> According to Ms. Thomas, the capacity price  
14 she lists on LJT-1 is the capacity price that would apply in an MRO, which she describes  
15 as "the capacity cost that a CRES (competitive electric retail service) provider would  
16 incur to serve a retail customer in AEP Ohio's service territory."<sup>26</sup> However, as FES  
17 witness Shanker explains, the capacity prices she uses are not the market prices that  
18 CRES providers incur to serve retail customers in AEP Ohio's service territory. Rather,  
19 these prices are derived from what AEP Ohio claims is its estimated embedded capacity  
20 cost, which Ms. Thomas adopts from what AEP Ohio first proposed, but has not been  
21 approved, in Case No. 10-2929-EL-UNC.

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<sup>25</sup> See Thomas Direct, Exh. LJT-1.

<sup>26</sup> Thomas Direct at 7:12-14.

1 Ms. Thomas does not justify her deviation from the approach taken in AEP  
2 Ohio's first ESP by AEP Ohio witness Baker, who relied on the PJM Reliability Pricing  
3 Model ("RPM") results for the relevant periods.<sup>27</sup> Furthermore, because AEP Ohio  
4 previously agreed to forego collection of stranded costs, the company should not be  
5 allowed to collect any above-market capacity costs.<sup>28</sup> Even if, *arguendo*, a cost-based  
6 price were appropriate, the capacity cost value promoted by Ms. Thomas significantly  
7 overstates AEP Ohio's capacity cost for the following reasons, which I explain below: (i)  
8 the capacity costs include generating plant investment made after the January 1, 2001  
9 transition date for market competition; (ii) the embedded capacity cost estimates double-  
10 count revenues from AEP Ohio's off-system sales; (iii) Ms. Thomas ignores AEP Ohio's  
11 commitment to recover, and its actual recovery of, the "stranded" fixed costs of its  
12 generating facilities through its base generation pricing; and (iv) as Mr. Schnitzer's  
13 testimony demonstrates, the proposed capacity prices are far greater than a "maximum  
14 above-market" capacity charge that would account for the energy and ancillary service  
15 revenues derived from the AEP Ohio generating resources that provide installed capacity,  
16 consistent with PJM capacity market rules.

17 **Q. WHAT CAPACITY COSTS DOES AEP OHIO INCLUDE IN THE**  
18 **COMPETITIVE BENCHMARK PRICE?**

19 A. In estimating its capacity cost, AEP Ohio includes all of its embedded generation-  
20 related costs. And, while AEP Ohio subtracts from those embedded costs the revenues  
21 from capacity-only sales for resale, it fails to subtract the contribution to those embedded

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<sup>27</sup> Direct Testimony of J. Craig Baker on Behalf of Columbus Southern Power Company and Ohio Power Company, Case No. 08-917-EL-SSO and 08-918-EL-SSO, filed July 31, 2008 ("Baker Testimony"), at 11.

<sup>28</sup> See the discussion below at pp. 19-27.

1 costs from energy-only sales for resale. This violates a basic ratemaking principle – a  
2 regulated entity is not allowed to charge ratepayers twice for the same cost. Moreover, as  
3 Mr. Shanker testifies, nothing in the PJM Reliability Assurance Agreement (“RAA”)  
4 provides for a utility being guaranteed recovery of all of its embedded generation-related  
5 costs, and the Independent Market Monitor requires that offers in PJM RPM auctions  
6 must reflect an offset for estimated revenues from energy sales.<sup>29</sup> Indeed, AEP Ohio  
7 already is recovering those costs, or has the opportunity to recover those costs, through  
8 other revenue streams such as its Standard Offer Generation Service Rider.

9 **Q. WHAT ARE AEP OHIO’S CAPACITY COST ESTIMATES FOR THE**  
10 **COMPETITIVE BENCHMARK PRICE?**

11 A. As shown in Ms. Thomas’s Exhibit LJT-1, AEP Ohio assumes 2012 capacity  
12 costs of \$28.31/MWh for residential customers, \$22.40/MWh for commercial customers,  
13 and \$16.40/MWh for industrial customers.<sup>30</sup> The methodology used by Ms. Thomas is  
14 based on an average capacity cost of \$347.97/MW-day for calendar year 2009, and  
15 conversion to \$/MWh values using the methodology shown in the spreadsheet “IEU INT-  
16 92 Attachment 1.xls” that was provided in response to data request IEU INT-92.

17 By comparison, the PJM RPM market-clearing prices for capacity are  
18 \$110.00/MW-day for June 2011 – May 2012, \$16.46/MW-day for June 2012 – May  
19 2013, and \$27.73/MW-day for June 2013 – May 2014, which equates to a weighted

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<sup>29</sup> Direct Testimony of Roy J. Shanker on Behalf of FirstEnergy Solutions Corp. dated July 25, 2011 (“Shanker Testimony”), at pp. 8-9, 24-30.

<sup>30</sup> AEP Ohio uses these capacity costs for two purposes only: calculating the expected results of an MRO and charging CRES suppliers for capacity. As discussed *infra*. Section III.A, these capacity costs are not included in AEP Ohio’s Price-to-Compare for SSO service.

1 average price of \$37.25/MW-day over the term of the ESP, or about one-tenth as large a  
2 capacity cost as AEP Ohio proposes.<sup>31</sup>

3 **Q. WHAT IS THE BASIS FOR AEP OHIO'S CAPACITY COST ESTIMATE?**

4 A. In AEP Ohio's first ESP filing, AEP Ohio witness Baker used the PJM RPM  
5 auction market-clearing prices for the relevant periods.<sup>32</sup> In contrast, Ms. Thomas uses  
6 the capacity costs AEP Ohio proposes in Case No. 10-2929-EL-UNC.<sup>33</sup> The derivation  
7 of these capacity costs is contained in Attachment 1 to the January 7, 2011 filing of AEP  
8 Ohio in that docket (but is not sponsored by any witness in this proceeding<sup>34</sup>) and is  
9 based on what is called a "formula rate." A formula rate is a methodology by which a  
10 cost-based revenue requirement is calculated, in this case for the fixed costs of AEP  
11 Ohio's generating units. The revenue requirement, **RR**, can be written as:

12 
$$\mathbf{RR} = \mathbf{O\&M} + \mathbf{DEPR} + \mathbf{TAXES} + (\mathbf{RETURN}) \times (\mathbf{RATE\ BASE}) - \mathbf{\$REV},$$

13 where:

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<sup>31</sup> Columbus Southern Power Company's and Ohio Power Company's Response to OCC 2nd Set, INT-056.a, Attachment 1 (Attached as Exhibit JAL-6). Ms. Thomas quotes a simple average of \$51.40/MW-day, which does not reflect the relative weights for the ESP period and is inconsistent with her exhibits LJT-1 and LJT-2.

<sup>32</sup> Baker Testimony at 11.

<sup>33</sup> Thomas Direct at 7:14-16.

<sup>34</sup> Columbus Southern Power Company's and Ohio Power Company's Response to FES 1st set RPD-005 (Attached as Exhibit JAL-7).

O&M = fixed operation and maintenance expenses  
DEPR = annual depreciation expense  
TAXES = income and other tax payments  
RETURN = overall rate of return on invested capital  
RATE BASE = net book value of generating assets, plus CWIP, plus regulatory assets,  
plus working capital, less deferred income taxes.  
\$REV = revenues from sales for resale of energy, capacity, and ancillary  
services

1  
2 The resulting revenue requirement is called the fixed (or embedded) production cost, and  
3 is the claimed basis for AEP's capacity cost estimates.

4 For example, as shown in the AEP Ohio capacity cost filing in Case No. 10-2929-  
5 EL-UNC, for the year ending December 31, 2009, OPC claims that its capacity-related  
6 costs were \$649,778,730, and CSP alleges capacity-related costs of \$415,260,737. Thus,  
7 according to AEP Ohio, its capacity-related costs for the year ending December 31, 2009  
8 totaled about \$1.065 billion. AEP Ohio is using these alleged 2009 capacity-related costs  
9 to calculate the capacity price component of the competitive benchmark prices shown in  
10 Exhibit LJT-1 for the 2012-2014 timeframe. However, these costs have not been  
11 approved or determined to be accurate or appropriate for any purpose, and certainly not  
12 for the purpose of approximating what might be expected to result under a MRO.  
13 Nevertheless, these fixed (or "embedded") production costs are what AEP Ohio uses to  
14 derive the capacity charges for the Competitive Benchmark Price shown in Exhibit LJT-1  
15 for each customer class.

1            ***1. Because AEP Ohio Previously Agreed to Forego Collection of Stranded Costs***  
2            ***and to Recover Its Generation Costs in the Competitive Markets, It Should not be***  
3            ***Allowed to Impose an Above-Market Capacity Price***

4    **Q.    WHAT IS THE RELEVANCE OF S.B. 3 TO AEP OHIO'S PROPOSAL TO USE**  
5    **ABOVE-MARKET CAPACITY PRICES?**

6    A.            S.B. 3 unbundled retail electric generation service from distribution and  
7            transmission service beginning January 1, 2001. When Ohio enacted S.B. 3, each electric  
8            utility was given an opportunity during a transition period to recover any previously-sunk  
9            costs in their generating facilities (*i.e.*, costs incurred prior to the transition date of  
10           January 1, 2001) that would be uneconomic in competitive markets.<sup>35</sup> (As I discuss in  
11           Section III.7, *infra*, this is another reason why AEP Ohio's claim to recover, through a  
12           provider-of-last-resort ("POLR") rider, the costs associated with customers leaving  
13           AEP's standard service and purchasing electricity from CRES providers is not valid.) By  
14           definition, a utility could not incur stranded generation costs for investments made after  
15           the transition date, because all such generation investments would be recovered in the  
16           market.

17            Because S.B. 3 provided a clear demarcation date between pre-transition and  
18            post-transition generation costs, any cost-based capacity charges levied by AEP Ohio  
19            could apply only to generating plant that was in-service on or before December 31, 2000,  
20            the day before the transition date of January 1, 2001, and only then if AEP Ohio had not  
21            waived recovery and/or already fully recovered these costs. Thus, AEP Ohio's proposal  
22            in this proceeding – to levy capacity charges using a cost-based, formula rate approach  
23            based on generating plant in service as of December 31, 2009 – is wrong for three

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<sup>35</sup> *In the Matter of the Applications of Columbus Southern Power Company and Ohio Power Company for Approval of Their Electric Transition Plans and for Receipt of Transition Revenues*, Case Nos. 99-1730-EL-ETP and 99-1731-EL-ETP (the "ETP Proceeding").

1 reasons. First, the transition period during which AEP Ohio was allowed to recover  
2 stranded generation costs is long over, and AEP Ohio is not entitled to any other cost-  
3 based recovery. Second, as I demonstrate below, AEP Ohio has already recovered all of  
4 its stranded generation costs. And, third, AEP includes in its capacity charges generating  
5 plant investment made by AEP Ohio between January 1, 2001 and December 31, 2009 –  
6 eight years’ worth of investment that, under S.B. 3, should be recovered only from  
7 market-based sales.

8 **Q. WHAT MARKET MECHANISMS CAN AEP OHIO USE TO COLLECT**  
9 **GENERATION CAPACITY COSTS?**

10 A. AEP can, and has, used the off-system and pool sales it makes every year to  
11 recover its capacity costs.<sup>36</sup> Similarly, AEP Ohio can recover, and has recovered, a  
12 portion of its capacity costs from sales into the PJM RPM auctions.<sup>37</sup> In addition to these  
13 market mechanisms, AEP Ohio also has collected an unknown and, according to AEP  
14 Ohio, unknowable portion of its capacity costs for many years through its base generation  
15 rates charged to its SSO customers.<sup>38</sup>

16 **Q. HOW WERE STRANDED COSTS TO BE RECOVERED?**

17 A. Stranded cost recovery took two forms, which became known as Generation  
18 Transition Costs (“GTCs”) and Regulatory Transition Costs (“RTCs”). An electric utility  
19 could recover GTCs through a transition charge during the transition period, provided the

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<sup>36</sup> See Columbus Southern Power Company’s and Ohio Power Company’s Response to OCC’s 4th set INT-136, 139, 140, 143, and OCC 4-143 Attachment 1 (attached as Exhibit JAL-8).

<sup>37</sup> See Columbus Southern Power Company’s and Ohio Power Company’s Response to OCC’s 4th set INT-146, 147 (attached as Exhibit JAL-9).

<sup>38</sup> Columbus Southern Power Company’s and Ohio Power Company’s Response to FES 4th set INT 4-005 (attached as Exhibit JAL-10).



1 costs satisfied statutory requirements.<sup>39</sup> At the end of the transition period, which was  
2 December 31, 2005, unless modified by the Commission as part of a utility's transition  
3 plan, S.B. 3 stated that, "the utility shall be fully on its own in the competitive market."<sup>40</sup>  
4 Similarly, an electric utility could recover its RTCs both during the transition period and  
5 for several years thereafter, but in any case no later than December 31, 2010.<sup>41</sup> For AEP  
6 Ohio, the transition period for recovering RTCs ended as of December 31, 2008.<sup>42</sup>

7 I understand this to mean that AEP Ohio's ability to recover stranded costs of its  
8 generating facilities – meaning, any costs that would not be fully recovered through the  
9 competitive market after the transition period – ended about five and one-half years ago  
10 for GTCs and about two and one-half years ago for RTCs. As I understand, under the  
11 transition provisions of S.B. 3, the PUCO was, and is, prohibited by law from authorizing  
12 "the receipt of transition revenues or any equivalent revenues by an electric utility except

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<sup>39</sup> R.C. 4928.39 provided for recovery of "just and reasonable transition costs of the utility, which costs the commission finds meet all of the following criteria:

(A) The costs were prudently incurred.

(B) The costs are legitimate, net, verifiable, and directly assignable or allocable to retail electric generation service provided to electric consumers in this state.

(C) The costs are unrecoverable in a competitive market.

(D) The utility would otherwise be entitled an opportunity to recover the costs."

<sup>40</sup> R.C. 4928.38.

<sup>41</sup> R.C. 4928.40.

<sup>42</sup> ETP Proceeding, Stipulation, Attachment 1 (May 8, 2000). Under the Stipulation, CSP could recover its RTCs through December 31, 2008, while OPC could recover its RTCs through December 31, 2007.

1 as expressly authorized.”<sup>43</sup> Moreover, an electric utility is barred from including any  
2 transition costs in an ESP or MRO.<sup>44</sup>

3 In the transition plan proceeding filed by CSP and OPC, the two companies  
4 estimated stranded costs of between \$894 million and \$953 million.<sup>45</sup> As part of the  
5 stipulation approved by the PUCO in that case, CSP and OPC waived the recovery of  
6 stranded generation costs through GTCs or other equivalent revenues through any  
7 mechanism other than competitive market pricing.<sup>46</sup>

8 CSP and OPC also agreed that their opportunity to recover RTCs would be  
9 limited to \$616 million, which CSP would recover over eight years and OPC would  
10 recover over seven years, and that this was sufficient to recover all regulatory assets.<sup>47</sup>  
11 Thus, as of no later than January 1, 2009, AEP Ohio had committed to recover its sunk  
12 costs (as well as its variable costs) in the competitive market.

13 **Q. WHAT ARE STRANDED COSTS AND WHY ARE THEY RELEVANT TO AEP**  
14 **OHIO’S CAPACITY COST ESTIMATE?**

15 A. Stranded costs are defined as the difference between the market value of an asset  
16 and its net undepreciated book value. For example, if a generating unit’s market value is  
17 estimated at \$500 million and its net book value is \$600 million, then the unit has  
18 stranded costs of \$100 million. Stranded costs are relevant to the capacity charge AEP

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<sup>43</sup> R.C. 4928.38.

<sup>44</sup> R.C. 4928.141 (“A standard service offer under section 4928.142 or 4928.143 of the Revised Code shall exclude any previously authorized allowances for transition costs, with such exclusion being effective on and after the date that the allowance is scheduled to end under the utility’s rate plan.”).

<sup>45</sup> ETP Proceeding, Supplemental Direct Testimony of John H. Landon on Behalf of Columbus Southern Power Company and Ohio Power Company, filed April 18, 2000, at 3.

<sup>46</sup> ETP Proceeding, Opinion and Order at 15-16, 18 (September 28, 2000); ETP Proceeding, Stipulation at pp. 3, 10 (May 8, 2000).

<sup>47</sup> ETP Proceeding, Stipulation at 4, 10 (May 8, 2000).

1 Ohio proposes to charge CRES customers, as well as the capacity costs it can collect  
2 from SSO customers, first because stranded costs hinge on the net undepreciated book  
3 value of generating plant-in-service ("GPIS"). Second, because R.C. 4928.01(A)(28)  
4 defined the starting date of competitive retail electric service as January 1, 2001, all  
5 generating plant investment since that date would be recovered from the market, rather  
6 than in cost-based rates. Thus, the only legitimate embedded capacity costs AEP Ohio  
7 could have recovered as stranded costs through a cost-based charge were those costs  
8 related to generating plant that was in service prior to the start of competitive retail  
9 service.

10 **Q. HOW DID YOU DETERMINE THE AMOUNT BY WHICH THE NET BOOK**  
11 **VALUE OF AEP OHIO'S GENERATING PLANTS SINCE THE ETP**  
12 **PROCEEDING DECREASED BETWEEN JANUARY 1, 2001 AND DECEMBER**  
13 **31, 2009?**

14 **A.** Using the original cost (gross plant) and accumulated depreciation values for  
15 generation plant published in CSP's and OPC's respective FERC Form-1 filings, I first  
16 determined the net undepreciated GPIS for both companies as of January 1, 2001. I then  
17 applied the annual depreciation rates shown in Exhibit JHL-2 of the testimony of AEP  
18 Ohio witness John Landon in the ETP Proceeding to calculate the net undepreciated  
19 GPIS values for each company as of December 31, 2009. The results of my analysis are  
20 shown in Table 1.

**Table 1: Reduction in Net Undepreciated GPIS Since 12/31/2000**

Line No.		CSP	OPC	TOTAL
[1]	Gross GPIS, December 31, 2000	\$1,558,721,963	\$2,739,392,759	\$4,298,114,722
[2]	Accumulated Depreciation, December 31, 2000	\$641,160,834	\$1,526,498,824	\$2,167,659,658
[3]	Net GPIS, December 31, 2000	\$917,561,129	\$1,212,893,935	\$2,130,455,064
[4]	Generation Plant Depreciation Rate	3.2%	3.4%	3.33%
[5]	Annual Depreciation of 12/31/2000 GPIS	\$49,879,103	\$93,139,354	\$143,018,457
[6]	Net GPIS, December 31, 2009	\$468,649,204	\$374,639,751	\$843,288,954
[7]	<b>Reduction in Net GPIS</b>	<b>(\$448,911,925)</b>	<b>(\$838,254,184)</b>	<b>(\$1,287,166,110)</b>

**Notes:**

- [1] Source: CSP, OPC 2000 FERC Form-1, pp.204-07.
- [2] Source: CSP, OPC 2000 FERC Form-1, p. 219.
- [3] Equals [1] - [2]
- [4] Source: ETP Proceeding, Landon Supplemental Direct, Revised Exhibit JHL-2.
- [5] Equals [1] x [4]
- [6] Equals [3] - 9 x [5]
- [7] Equals [3] - [6]

Table 1 shows that, using the generation depreciation rates assumed by AEP witness Landon in the ETP proceeding for his calculation of stranded generation costs, an additional \$449 million of CSP's GPIS on December 31, 2000 was depreciated through December 31, 2009. Similarly, an additional \$838 million of OPC's GPIS on December 31, 2000 was depreciated through December 31, 2009. Thus, over the 9-year period between December 31, 2000 and December 31, 2009, AEP Ohio accrued \$1.29 billion of depreciation related to its GPIS as of December 31, 2000 (ignoring all subsequent capital additions that would further add to the overall depreciation accrual). Because stranded generation costs are defined as the difference between the market value of an asset (i.e., the net present value of future generation plant cash flows) and net undepreciated book value, these additional depreciation accruals represent a reduction in the initial estimates of CSP's and OPC's stranded generation costs. In other words, because the remaining undepreciated book value of pre-2001 generating plant investments necessarily decreases over time, so do stranded costs.

1 **Q. HOW WERE THE STRANDED GENERATION COSTS FOR CSP AND OPC**  
2 **ESTIMATED IN THE ETP PROCEEDING?**

3 A. CSP and OPC relied on a revenue-based approach, developed by AEP Ohio  
4 witness Landon, in which the net present value of each generating unit was estimated  
5 based on forecasts of future market prices and costs over the generating plant's remaining  
6 lifetime.<sup>48</sup> AEP Ohio also identified "regulatory assets" as costs that are distinct from  
7 stranded costs related to generation assets or the transition to competition. These  
8 "regulatory assets" are deferred expenses, including deferred taxes, from which  
9 ratepayers have already benefited but which had not been collected only because of past  
10 Commission orders and practices.<sup>49</sup>

11 **Q. WHAT IS THE RELATIONSHIP BETWEEN THE EMBEDDED CAPACITY**  
12 **COSTS OF AEP OHIO'S GENERATING UNITS AND THE ESTIMATE OF ITS**  
13 **STRANDED COSTS?**

14 A. The stranded generating cost estimates determined by AEP Ohio witness Landon  
15 in the ETP Proceeding for CSP and OPC were based on projections of future generation  
16 revenues, less future O&M costs (including fuel), taxes, and insurance, less the  
17 generating plants' overall net undepreciated book value as of December 31, 2000. In  
18 comparison, the embedded generation costs estimated by AEP Ohio in its capacity cost  
19 filing are a one-year snapshot of fixed costs that include a return on the undepreciated  
20 value of all of its generating plant, including all generating plant capital investment made  
21 on or after January 1, 2001, as of December 31, 2009.

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<sup>48</sup> ETP Proceeding, Direct Testimony of John Landon on behalf of Columbus Southern Power Company and Ohio Power Company, December 30, 1999 ("ETP Landon Direct"), at 25-26.

<sup>49</sup> *Id.* at p. 9.

1 **Q. WHAT WERE THE STRANDED COST ESTIMATES DETERMINED BY MR.**  
2 **LANDON IN THE ETP PROCEEDING?**

3 A. According to Exhibit JHL-2 of Mr. Landon's testimony, he estimated stranded  
4 costs of \$517.5 million for CSP and \$139.4 million for OPC under his "Base  
5 Environment, Low Gas" scenario.<sup>50</sup> Under his "High Gas, Alternative Environment"  
6 scenario, he estimated stranded costs of \$476.7 million and \$45.9 million for CSP and  
7 OPC, respectively. In Supplemental Direct testimony, Mr. Landon revised these  
8 estimates to \$539.8 million and \$558.7 million for CSP, and \$353.8 million and \$394.4  
9 million for OPC under Low and High gas price scenarios.<sup>51</sup> The aggregate stranded cost  
10 estimate derived by Mr. Landon for AEP Ohio was therefore between \$893.6 million and  
11 \$953.1 million.

12 **Q. BASED ON MR. LANDON'S ESTIMATES, DO YOU CONCLUDE THAT AEP**  
13 **HAS RECOVERED ITS STRANDED GENERATION-RELATED COSTS?**

14 A. Yes. Mr. Landon's highest estimate of stranded generation costs for AEP Ohio  
15 was \$953.1 million. Because AEP Ohio recovered almost \$1.3 billion in depreciation  
16 costs between December 31, 2000 and December 31, 2009 for GPIS, as shown in Table 1  
17 above, it is reasonable to conclude that AEP Ohio has fully recovered all stranded  
18 generation costs. These depreciation accruals have eliminated from CSP's and OPC's  
19 books the stranded costs estimated by Mr. Landon, leaving only costs that are "un-  
20 stranded" and, thus, may be recovered through competitive markets at market pricing.

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<sup>50</sup> ETP Landon Direct at 44:12-14.

<sup>51</sup> ETP Proceeding, Supplemental Direct Testimony of John Landon, April 18, 2000, at 8. For his revised estimates, Mr. Landon assumed only one environmental regulation scenario.

1 **Q. WHAT IS THE SIGNIFICANCE OF YOUR CONCLUSION THAT AEP OHIO**  
2 **HAS RECOVERED ALL OF ITS STRANDED GENERATION COSTS?**

3 A. In addition to the fact that AEP waived, and is not entitled to receive, any  
4 additional recovery of stranded costs, AEP Ohio has no basis for charging CRES  
5 customers an above-market price for capacity or including an above-market price for  
6 capacity in its Competitive Benchmark Price because AEP Ohio has recovered all of its  
7 stranded generation costs. (This also explains why AEP Ohio has no basis whatsoever to  
8 recover, as part of its POLR Charge rider, costs associated with lost revenues from  
9 customers who decide to purchase electricity from CRES providers.) Any order that  
10 provided for cost-based recovery would not only be contrary to Ohio's policy that this be  
11 at market, but would also inappropriately result in double recovery.

12 ***2. AEP Ohio's Formula Rate Estimates of its Capacity Costs are Wrong and Greatly***  
13 ***Inflated by a Factor of Ten***

14 **Q. PLEASE EXPLAIN WHY AEP OHIO'S FORMULA RATE CAPACITY COST**  
15 **ESTIMATES THAT IT USES AS A COMPONENT OF THE COMPETITIVE**  
16 **BENCHMARK PRICE ARE INCORRECT.**

17 A. As explained above, AEP Ohio uses a formula rate to calculate what it alleges is a  
18 cost-based revenue requirement for the fixed costs of AEP Ohio's generating units.  
19 There are three reasons why AEP Ohio's capacity cost estimates, which are based on the  
20 company's filing in Case No. 10-2929-EL-UNC, are incorrect and greatly inflated. First,  
21 AEP Ohio's capacity costs are unsupported in this proceeding and rely on stale data.  
22 Second, AEP Ohio's formula rate capacity cost estimates wrongly double-recover  
23 capacity costs, because they fail to account for the contribution to embedded capacity  
24 costs from energy-related sales for resale. Third, even if, *arguendo*, one accepts AEP  
25 Ohio's proposal to levy a formula rate-based capacity charge and ignores that AEP Ohio

1 has recovered all of its stranded generation costs, then the formula rate estimate should  
2 reflect only generating plant investment that was in-service prior to the January 1, 2001  
3 transition date. As such, it is necessary to adjust the rate base, return on rate base,  
4 depreciation expense, and income tax values in AEP Ohio's capacity cost filing to reflect  
5 only pre-transition date generating plant.

6 **Q. PLEASE EXPLAIN WHY THE PROPOSED CAPACITY COSTS RELY ON**  
7 **STALE DATA.**

8 A. Attachment A of AEP Ohio's January 7, 2011 filing in Case No. 10-2929-EL-  
9 UNC shows how the company populated the different FERC categories for its capacity  
10 cost estimate for calendar year 2009, which AEP Ohio proposes to charge CRES  
11 customers over the entire ESP period between January 2012 and May 2014. This is  
12 problematic because AEP Ohio uses stale data from calendar year 2009, unadjusted for  
13 any known and measurable changes that will have taken place by the time the proposed  
14 ESP begins on January 1, 2012. The use of stale data without such adjustments for  
15 known and measurable changes is inconsistent with basic ratemaking principles.

16 **Q. DO ANY AEP OHIO WITNESSES SUPPORT THE 2009 CAPACITY COSTS**  
17 **AND IDENTIFY THE KNOWN AND MEASURABLE CHANGES IN THOSE**  
18 **COSTS BETWEEN DECEMBER 31, 2009 AND JANUARY 1, 2012?**

19 A. No. I am not aware of any AEP Ohio witnesses who will testify on the mechanics  
20 of AEP Ohio's "formula rate" capacity cost estimate that the company filed in Case No.  
21 10-2929-EL-UNC. Nor am I aware of any AEP Ohio witnesses that have attempted to  
22 adjust the 2009 data for known and measurable changes to estimate a capacity cost that  
23 would apply for the entire period of the proposed ESP.



1 **Q. PLEASE EXPLAIN WHY FIXED COSTS RECOVERED FROM ENERGY-**  
2 **RELATED SALES FOR RESALE MUST ALSO BE SUBTRACTED FROM AEP**  
3 **OHIO'S CAPACITY COST ESTIMATE?**

4 A. In its formula rate estimates of 2009 capacity costs, AEP Ohio subtracts out only  
5 those revenues from capacity-specific sales for resale. AEP Ohio ignores the fact that it  
6 also recovers a portion of its fixed costs when it makes energy-related sales for resale  
7 because revenues received from those sales that exceed AEP Ohio's variable O&M plus  
8 fuel costs recover a portion of its embedded capacity costs. Regardless of AEP Ohio's  
9 assumption that it is entitled to recover its full embedded costs in its proposed capacity  
10 charges, the company is not allowed to double recover those costs, which is clearly  
11 incompatible with basic rate regulation. Thus, AEP Ohio is required to subtract all  
12 revenues from sales for resale that contribute to the recovery of embedded generation  
13 costs.

14 **Q. HOW DO YOU ESTIMATE THE CONTRIBUTION TO EMBEDDED**  
15 **CAPACITY COSTS FROM ENERGY SALES FOR RESALE?**

16 A. All of the revenues from energy sales for resale that exceed variable (or marginal)  
17 costs by definition contribute to embedded costs. For example, suppose that AEP Ohio's  
18 energy revenues from energy sales for resale total \$200 million more than total fuel and  
19 variable O&M expenses recorded for these sales. In that case, AEP Ohio has now  
20 recovered \$200 million of embedded capacity costs from energy sales for resale, in  
21 addition to revenues from capacity sales for resale. If AEP Ohio does not subtract this  
22 \$200 million in embedded capacity costs from its formula rate capacity cost estimate, the  
23 costs become part of the company's "Annual Production Cost" estimates, which are what  
24 AEP Ohio uses to set the capacity prices that it proposes to use to charge customers for

1 PJM-related capacity costs.<sup>52</sup> Thus, not only does AEP Ohio not intend to use a market  
2 price for generation capacity, it intends to double-recover a portion of its embedded  
3 generation costs.

4 **Q. WHAT REVENUES DID AEP OHIO EARN FROM ENERGY-RELATED SALES**  
5 **FOR RESALE IN 2009?**

6 A. According to data published in CSP's and OPC's respective FERC Form-1 filings  
7 for 2009, the revenues from CSP's total non-requirements ("non-RQ") energy-related  
8 sales for resale were \$239,047,910 in 2009. OPC's revenues from energy-related sales  
9 for resale were \$1,197,682,165. Of these amounts, AEP Ohio reports that CSP Pool  
10 Capacity Demand sales were \$6,049,966, while OPC Pool Capacity Demand sales were  
11 \$383,415,706. The remaining revenues of \$232,997,944 for CSP (\$239,047,910 –  
12 \$6,049,966) and \$814,266,459 for OPC (\$1,197,682,165 – \$383,415,706) are included in  
13 AEP Ohio's capacity revenue requirement.<sup>53</sup> Thus, the difference between these  
14 revenues and each utility's respective variable O&M and fuel costs associated with those  
15 off-system sales represents dollars that, by definition, recover embedded generating costs.

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<sup>52</sup> As shown on page 2 of Attachment A, Part 1 of AEP Ohio's January 7, 2011, capacity filing in Case No. 10-2929-EL-UNC, the daily capacity rate is calculated as:

$$\$/\text{MW-day} = \frac{\text{Annual Production Fixed Cost}}{5 \text{ CP Demand}/365}$$

Where "5 CP Demand" refers to the average of the individual utility (CSP or OPC) peak demands coincident with the five highest daily peak demand values in PJM.

<sup>53</sup> The January 7, 2011 filing does not break out capacity sales for Pool Capacity Demand and other capacity sales. These data can be found in AEP Ohio's February 7, 2011 filing in Case No. 10-2929-EL-UNC, at Attachment 1, WP-15d.

1 **Q. HAVE YOU ESTIMATED THE REVENUES FROM SALES FOR RESALE**  
2 **THAT CONTRIBUTED TO AEP OHIO'S EMBEDDED GENERATION COSTS?**

3 A. Yes. The details of my calculations for CSP and OPC are shown in Table 3,  
4 below. For each company, I began by determining the total variable costs associated with  
5 its power production expenses, using the FERC accounts shown in Table 2, which are the  
6 accounts AEP Ohio classifies as variable costs.<sup>54</sup>

7 **Table 2: FERC Energy-Related Power Production Expense Accounts**

FERC Account		Account Description
<b>Steam Power Generation</b>		
501	Fuel	
503	Steam from Other Sources	
504	Steam Transfers (credit)	
509	Emissions Allowances	
510	Maintenance Supervision and Engineering	
512	Maintenance of Boiler Plant	
513	Maintenance of Electric Plant	
<b>Hydraulic Power Generation</b>		
544	Maintenance of Electric Plant	
<b>Other Power Generation</b>		
547	Fuel	

8 Using the CSP's and OPC's FERC Form-1 filings for the year ended December  
9 31, 2009, I determined total energy-related power production expenses. I then  
10 determined an average energy-related cost/MWh of generation, based on reported total  
11 generation, as shown in the Electric Energy Accounts, page 401a of each company's  
12 FERC Form-1. Using this value as the energy-only cost per MWh, I then calculated total  
13 energy-related power production expenses associated with sales for resale, based on the  
14 total non-requirement reported sales for resale, as recorded in Account No. 447. I then  
15 subtracted this value from the reported energy sales values reported by AEP Ohio for

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<sup>54</sup> See January 7, 2011 filing, Attachment A, Part 1, at 15.

each of CSP and OPC in the WP-15d of Attachment 1 to the February 7, 2011, capacity cost filing. Because two of CSP's generating plants—Waterford and Darby—were constructed after the January 1, 2001 transition date, I adjusted the net contribution to embedded costs from energy sales from these plants. In that way, my revised capacity cost estimate is consistent with incorporating only pre-transition GPIS.

Using this approach, and as shown in more detail in Table 3 below, I estimated that CSP's pre-2001 generating plants contributed \$76.2 million towards recovery of embedded costs, and that OPC's generating plants contributed about \$246.0 million towards recovery of embedded costs, or \$322.2 million of embedded cost recovery in the aggregate, for which AEP Ohio seeks to double-recover.

1 **Table 3: Contribution to Embedded Capacity Costs from Sales for Resale (2009)**

Line No.	Type	FERC Account	CSP	OPC	TOTAL
<b>Steam Power Generation</b>					
[1]	501	Fuel	\$ 268,128,076	\$ 899,340,627	\$ 1,167,468,703
[2]	503	Steam from Other Sources	\$ -	\$ -	\$ -
[3]	504	Steam Transfers (credit)	\$ -	\$ -	\$ -
[4]	509	Emissions Allowances	\$ 7,413,973	\$ 5,569,548	\$ 12,983,521
[5]	510	Maintenance Supervision and Engineering	\$ 2,430,209	\$ 12,639,034	\$ 15,069,243
[6]	512	Maintenance of Boiler Plant	\$ 51,693,575	\$ 98,446,429	\$ 150,140,004
[7]	513	Maintenance of Electric Plant	\$ 10,720,148	\$ 17,373,020	\$ 28,093,168
<b>Hydraulic Power Generation</b>					
[8]	544	Maintenance of Electric Plant	\$ -	\$ 1,195,178	\$ 1,195,178
<b>Other Power Generation</b>					
[9]	547	Fuel	\$ 1,120,722	\$ -	\$ 1,120,722
[10]	<b>Total Energy-related Production Costs</b>		<b>\$ 341,506,703</b>	<b>\$ 1,034,563,836</b>	<b>\$ 1,376,070,539</b>
[11]	<b>Total Power Production (MWh)</b>		12,012,080	47,700,622	\$ 59,712,702
[12]	<i>Power production - post-2001 GPIS (MWh)</i>		641,627	-	641,627
[13]	<b>Net pre-2001 GPIS power production (MWh)</b>		<b>11,370,453</b>	<b>47,700,622</b>	<b>59,071,075</b>
[14]	<b>Average energy-only production costs (\$/ MWh)</b>		\$ 28.4303	\$ 21.6887	\$ 23.0449
[15]	<b>Total Reported Energy Sales for Resale (MWh)</b>		5,363,938	26,202,795	\$ 31,566,733
[16]	<b>Estimated Variable Production Costs, Sales for Resale</b>		\$ 152,498,217	\$ 568,304,206	\$ 720,802,423
[17]	<b>Total Reported Energy-related Revenues from Sales for Resale</b>		\$ 232,997,944	\$ 814,266,459	\$ 1,047,264,403
[18]	<b>Net Contribution to Embedded Generation Costs</b>		<b>\$ 80,499,727</b>	<b>\$ 245,962,253</b>	<b>\$ 326,461,980</b>
[19]	<b>Adjustment for post-2001 GPIS production</b>		<b>\$ 4,299,905</b>	<b>\$ -</b>	<b>\$ 4,299,905</b>
[20]	<b>Net Contribution to Embedded Generation Costs, pre-2001 GPIS</b>		<b>\$ 76,199,822</b>	<b>\$ 245,962,253</b>	<b>\$ 322,162,076</b>

**Notes:**

- [1] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [2] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [3] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [4] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [5] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [6] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [7] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [8] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [9] Source: 2009 FERC Form-1 Report, pp. 320-21.
- [10] Equals: [1] + [2] + ... + [9].
- [11] Source: 2009 FERC Form-1 Report, p. 401a.
- [12] Source: 2009 FERC Form-1 Report, p. 403.1.
- [13] Equals: [11] - [12].
- [14] Equals: [10] / [11].
- [15] Source: 2009 FERC Form-1 Report, p. 311.
- [16] Equals: [14] x [15].
- [17] Source: Case No. 10-2929-EL-UNC, February 7, 2011, Attachment 1, WP-15d, p.37.
- [18] Equals: [17] - [16].
- [19] Equals: ([12] / [11]) x [18].
- [20] Equals: [18] - [19].

1 **Q. PLEASE DESCRIBE HOW YOU REVISED AEP OHIO'S FORMULA RATE**  
2 **ESTIMATE OF ITS CAPACITY COSTS TO ACCOUNT FOR PRE-2001**  
3 **GENERATING PLANT.**

4 A. In addition to correcting for double-recovery of embedded generation costs, I  
5 recalculated the capacity cost based on depreciation for pre-2001 GPIS only. I also  
6 accounted for the additional depreciation of existing generating plant that was in service  
7 on January 1, 2001 to determine the net undepreciated value of that generating plant as of  
8 December 31, 2009, because it is the undepreciated value that determines the "rate base,"  
9 and return on that rate base.<sup>55</sup> I then adjusted the income tax payments because, with a  
10 lower return on rate base, the income tax paid on that return would also decrease.  
11 Finally, I adjusted the investment tax credit CSP and OPC receive.

12 **Q. WHAT ARE YOUR REVISED CAPACITY COST ESTIMATES FOR CSP AND**  
13 **OPC?**

14 A. The revised capacity cost estimates I calculate are shown in Table 4. As can be  
15 seen, the resulting capacity cost estimate for CSP is \$156.14/MW-day. The estimate for  
16 OPC is (\$66.21)/MW-day, which means that OPC's revenues from off-system and pool  
17 capacity and energy sales are greater than its embedded capacity costs. The overall  
18 average capacity cost value for AEP Ohio is \$34.41/MW-day. That value is less than the  
19 \$110/MW-day clearing price in the 2011-2012 RPM auction, but higher than the clearing  
20 prices in the 2012-2013 and 2013-2014 auctions. Over the entire period of the proposed  
21 ESP, the average capacity cost is slightly less than the average RPM market clearing  
22 price, \$37.25/MW-day.

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<sup>55</sup> As a conservatism, I did not further reduce the value of AEP Ohio's net undepreciated generating assets as of December 31, 2000 by ADIT, which is far larger than cash working capital. For example, the January 7, 2011 filing shows that ADIT was \$832.5 million for OPC and \$298.3 million for CSP. Cash working capital for the two companies was \$39.4 million and \$12.4 million, respectively. See January 7, 2011 filing, Attachment A, p. 5.

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Table 4: Revised Capacity Cost Estimates

Line No.		CSP	OPC	TOTAL
[1]	Annual Production Fixed Cost, as Reported	\$415,260,737	\$649,778,730	\$1,065,039,467
[2]	(Energy-only contribution to embedded costs s adjustment)	(\$76,199,822)	(\$245,962,253)	(\$322,162,076)
	<u>Depreciation Expense Adjustment</u>			
[3]	Depreciation Expense , as Reported	\$55,060,009	\$228,619,407	\$283,679,416
[4]	<u>Annual Depreciation Expense, GPIS 12/31/2000</u>	<u>\$49,879,103</u>	<u>\$93,139,354</u>	<u>\$143,018,457</u>
[5]	<u>Calculated Depreciation Rate Adjustment</u>	<u>(\$5,180,906)</u>	<u>(\$135,480,053)</u>	<u>(\$140,660,959)</u>
	<u>Return on Rate Base Adjustment</u>			
[6]	Return on Rate Base, as Reported	\$125,285,005	\$297,934,517	\$423,219,522
[7]	Allowed Return	8.23%	7.68%	
[8]	<u>Return on Net GPIS 12/31/2000, as of 12/31/2009</u>	<u>\$38,569,829</u>	<u>\$28,772,333</u>	<u>\$67,342,162</u>
[9]	<u>Calculated Return on Rate Base Adjustment</u>	<u>(\$86,715,176)</u>	<u>(\$269,162,184)</u>	<u>(\$355,877,360)</u>
	<u>Income Tax Adjustment</u>			
[10]	Income Tax Expense , as Reported	\$44,632,553	\$121,881,938	\$166,514,491
[11]	ITC, as Reported	(\$1,818,424)	(\$482,952)	(\$2,301,376)
[12]	Income Tax Rate	35.6248%	40.9090%	
[13]	Income Tax on Adjusted Return on Rate Base	\$13,740,425	\$11,770,474	\$25,510,898
[14]	<u>ITC, Revised Based on 12/31/2000 GPIS</u>	<u>(\$1,818,424)</u>	<u>(\$482,952)</u>	<u>(\$2,301,376)</u>
[15]	<u>Calculated Income Tax Adjustment</u>	<u>(\$30,892,128)</u>	<u>(\$110,111,464)</u>	<u>(\$141,003,593)</u>
[16]	Total Adjustments to Annual Production Cost, as Reported	(\$198,988,033)	(\$760,715,955)	(\$959,703,987)
[17]	Revised Annual Production Costs	\$216,272,704	(\$110,937,225)	\$105,335,480
[18]	5 CP Coincident Peak Demand (MW)	3794.8	4590.8	8385.6
[19]	Revised Daily Capacity Cost (\$/MW-day)	\$156.14	(\$66.21)	\$34.41

## Notes:

- [1] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 4.  
[2] Source: Table 2, line 20.  
[3] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 4.  
[4] Source: Table 1, line 5.  
[5] Equals: [4] - [3].  
[6] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 4.  
[7] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 5.  
[8] Equals: [Table 1, line 6] x [7].  
[9] Equals: [8] - [6].  
[10] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 18.  
[11] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 18.  
[12] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 18.  
[13] Equals: [12] x [8].  
[14] No material change to ITC estimate.  
[15] Equals: {[13] - [10]} + {[14] - [11]}.  
[16] Equals: [2] + [5] + [9] + [15].  
[17] Equals: [1] + [17].  
[18] Source: Case No. 10-2929-EL-UNC, Attachment A, p. 2.  
[19] Equals: [17] / [18] / 365.

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3

1 **Q. HOW DOES YOUR AVERAGE CAPACITY VALUE OF \$34.41/MW-DAY**  
2 **RECONCILE WITH MR. SCHNITZER'S "MAXIMUM ABOVE-MARKET"**  
3 **CAPACITY PRICE?**

4 A. Mr. Schnitzer estimates a "maximum above-market" capacity price of \$162/MW-  
5 day based on a 2010 test year.<sup>56</sup> Mr. Schnitzer arrived at this price by subtracting out  
6 energy and ancillary service revenues from AEP Ohio's formula rate and cost  
7 information, just as PJM does to determine the cost of new entry ("CONE") for a  
8 hypothetical generating facility and as the Independent Market Monitor ("IMM") does to  
9 determine the maximum prices at which individual generating units can be offered into  
10 the RPM, but does not include additional, required adjustments I make here. Whereas the  
11 capacity price I show above reflects a necessary reduction in AEP Ohio's inflated  
12 capacity cost estimate, Mr. Schnitzer's "maximum above-market" price represents a  
13 maximum price that AEP Ohio could charge for capacity.<sup>57</sup>

14 **Q. CAN YOU SUMMARIZE YOUR OVERALL CONCLUSIONS REGARDING**  
15 **THE CAPACITY PRICE USED BY MS. THOMAS TO CALCULATE THE**  
16 **COMPETITIVE BENCHMARK PRICE?**

17 A. Yes. First, because AEP Ohio agreed to forego recovery of its stranded  
18 generation costs, it should reflect a market price for capacity. Second, my analysis shows  
19 that, even if AEP Ohio had not agreed to forego recovery of stranded generation costs, it  
20 in any case recovered all of them over the nine-year period between December 31, 2000  
21 and December 31, 2009.<sup>58</sup> Again, therefore, AEP Ohio should charge a market price for  
22 capacity. Third, even if, *arguendo*, AEP Ohio could charge a cost-based rate for  
23 capacity, using a formula rate approach, that cost should not include double-counting and

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<sup>56</sup> Schnitzer Direct at p. 38.

<sup>57</sup> *Id.* at pp. 36-37.

<sup>58</sup> See Table 1, above, and discussion thereafter.



1 should reflect only capacity costs associated with pre-transition generating resources (*i.e.*,  
2 those in-service before January 1, 2001). I calculate an average capacity cost for those  
3 resources of \$34.41/MW-day, which is almost identical to the average RPM market-  
4 clearing price for capacity over the term of the proposed ESP and approximately ten  
5 times lower than the greatly inflated capacity price that AEP Ohio uses in its Competitive  
6 Benchmark Price.

7 **Q. WHAT IS THE APPROPRIATE CAPACITY PRICE TO USE FOR PURPOSES**  
8 **OF COMPARING AEP OHIO'S ESP TO THE MRO?**

9 A. Market-based capacity prices are the most reasonable for purposes of developing  
10 the Competitive Benchmark Price for a MRO. Today's competitive market for capacity  
11 is PJM's RPM. Thus, AEP Ohio should recover its capacity costs through that market or,  
12 at minimum, should be limited to market prices.

13

1 **III. AEP'S RATE DESIGN FOR ITS PROPOSED ESP IS NOT REASONABLE**

2 **Q. WHICH SPECIFIC RATE DESIGN ASPECTS OF THE ESP DO YOU**  
3 **ADDRESS?**

4 A. I specifically address the following riders:

Rider	Type	Stated Purpose
GSR	Bypassable	The base generation charge intended to produce AEP Ohio's requested average generation price
MTR	Nonbypassable	Recovery of costs associated with transition to "market" rates based on new AEP Ohio cost allocations
RSR	Bypassable	Rate subsidy of up to 15% for large commercial and industrial customers who commit to take service from AEP Ohio through May 2017
CCSR	Nonbypassable	Recovery of costs associated with a proposed carbon capture and sequestration plant to be built at Appalachian Power Company's Mountaineer plant site in West Virginia
EICCR	Nonbypassable	Recovery of environmental improvement and control costs for environmental equipment installed at AEP Ohio generating facilities
FCCR	Nonbypassable	Recovery of costs associated with possible future closure of AEP Ohio generating facilities
GRR	Nonbypassable	Recovery of generation facility investment costs, beginning with Turning Point solar facility
NERCR	Nonbypassable	Recovery of NERC-related generation costs
POLR	Nonbypassable	Recovery of cost to AEP Ohio from allowing customers to shop for competitively sourced electricity

5 **A. The Base Generation Revenues and Rate Class Allocation Mechanisms**  
6 **Are Unreasonable and Anti-Competitive**

7 **Q. WHAT IS THE PURPOSE OF THE GSR?**

8 A. AEP Ohio states that the Standard Offer Generation Service Rider ("GSR")  
9 includes all base generation charges from its Standard Service Offer tariffs. It will apply  
10 to all non-shopping customers, except those that have elected not to pay the POLR  
11 charges and have returned to the SSO at market-based rates.<sup>59</sup> The GSR lists the summer

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<sup>59</sup> Roush Direct at 4:20-5:3.

1 and winter rates paid by each customer class for “base” generation, which, in the  
2 aggregate, equate to the Base Generation Rate or “g.”

3 **Q. IS THE GSR “BUILT UP” FROM THE BASE GENERATION RATE, FUEL**  
4 **COSTS, AND ENVIRONMENTAL CARRYING COSTS?**

5 A. No, just the opposite. The GSR is determined based on the “total proposed  
6 generation revenues” AEP Ohio sets for each year of the ESP. From that value, AEP  
7 Ohio subtracts an estimate of fuel costs and environmental carrying costs to derive its  
8 GSR rates. The GSR recovers all or part of AEP Ohio’s capacity, energy and ancillary  
9 services costs.<sup>60</sup>

10 **Q. WHAT RELATIONSHIP DOES THE GSR HAVE TO THE PRICE-TO-**  
11 **COMPARE (“PTC”)?**

12 A. As proposed for the 2012 ESP, the GSR charge plus charges imposed under the  
13 Fuel Adjustment Clause Rider (“FAC”) and Alternative Energy Rider establish the PTC  
14 for each customer class. In order for a customer to save money through shopping, a  
15 CRES supplier’s rate has to be lower than the PTC over time. Thus, the level at which  
16 AEP Ohio fixes its GSR will have a substantial impact on competition in AEP Ohio’s  
17 service territory.

18 **Q. IS THE GSR COST-BASED?**

19 A. No, it is not. As I explained above, AEP Ohio “backs into” its GSR rates simply  
20 by designing rates necessary to “produce AEP Ohio’s requested average generation

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<sup>60</sup> FES INT-4-005 (attached as Exhibit JAL-10); FES INT-4-015 (attached as Exhibit JAL-11). As discussed below, AEP Ohio cannot say how much of its capacity, energy, and ancillary services costs are recovered through the GSR.

price” and then backing out FAC and EICCR costs.<sup>61</sup> AEP Ohio has explained that the GSR is not cost-based, despite including vestiges of historical cost relationships.<sup>62</sup> However, AEP Ohio should have to demonstrate that the GSR is not set so as to unfairly harm market competition.

**Q. IS THE GSR MARKET-BASED?**

A. No, it is not.

**Q. IF THE GSR IS NEITHER COST-BASED NOR MARKET-BASED, WHAT IS IT?**

A. The GSR is an arbitrary value set by AEP Ohio. SSO pricing under an ESP cannot be set in a way that unfairly restricts competition. Yet, in developing the ESP, AEP Ohio has: (1) set an arbitrary generation revenue target that it wishes to collect, which determines the average generation service price based on forecast electricity sales to SSO customers; (2) allocated those costs among the different customer classes and existing rate tariffs based on an arbitrary determination of “market price” relationships; (3) subtracted out anticipated fuel costs and environmental investment costs, which it recovers through separate riders and, in the case of the proposed nonbypassable EICCR and FCCR, double-recovers costs through its capacity charge; and (4) determined the resulting dollar amount to be the revenues it will collect from SSO customers to recover the fixed (“embedded”) and non-fuel variable operation and maintenance costs associated with its generating plants, deeming the result “Base Generation Revenues” (“BGR”).

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<sup>61</sup> *Id.* at 9:6-11.

<sup>62</sup> *Id.* at 9:21-10:5.

1 **Q. IS IT SIGNIFICANT THAT THE GSR AND BASE GENERATION REVENUES**  
2 **ARE NEITHER COST-BASED NOR MARKET-BASED?**

3 A. Yes. The significance stems from how these arbitrary values will foreclose  
4 competition. Specifically, AEP Ohio is proposing to under-recover its actual generating  
5 costs from SSO customers through its “base” generation rates and, instead, to recover  
6 those generation costs through a variety of nonbypassable rate riders. As such, AEP Ohio  
7 customers will have a disincentive to shop for competitively supplied electricity, because  
8 if they do so they will be forced to bear numerous costs twice.

9 **Q. HAS AEP OHIO JUSTIFIED THE LEVEL AT WHICH THE GSR IS SET?**

10 A. No. In response to discovery request FES-INT-4-005 (attached as Exhibit JAL-  
11 10) regarding the 2011 base ‘g’ rate, Ms. Thomas states, “SB221 does not require rates  
12 for generation service, including capacity and energy, to be based on cost. AEP Ohio has  
13 not conducted a cost of service study for unbundled generation service. However, the  
14 2011 Base ESP ‘g’ rate includes both energy and capacity.” In response to discovery  
15 request FES-INT-4-015 (attached as Exhibit JAL-11), Ms. Thomas also states that the  
16 base “g” rate includes ancillary service costs. AEP Ohio further has stated that “the  
17 Company’s ESP is not cost based and the Company has not identified any specific  
18 capacity costs or capacity credits in its rates.”<sup>63</sup>

19 Thus, AEP Ohio’s position is that the GSR is not cost-based, but that it does  
20 include recovery of costs related to energy, capacity, and ancillary services. AEP Ohio  
21 simply cannot identify how much of those costs are recovered through the GSR.

22 **Q. AEP OHIO IS PROPOSING IN CASE NO. 10-2929-EL-UNC THAT RETAIL**  
23 **SHOPPING CUSTOMERS PAY \$28.31/MWH (RESIDENTIAL), \$22.40/MWH**

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<sup>63</sup> AEP Ohio’s response to FES INT-10-11 (attached as Exhibit JAL-12).

1 **(COMMERCIAL), OR \$16.40/MWH (INDUSTRIAL) FOR CAPACITY. DOES**  
2 **AEP OHIO ALSO PROPOSE TO CHARGE THESE RATES TO ITS SSO**  
3 **CUSTOMERS TO RECOVER ITS CAPACITY COSTS?**

4 A. No. AEP Ohio intends only to charge these capacity prices to customers who  
5 purchase power from CRES suppliers.<sup>64</sup> As I discuss below, AEP Ohio's Base  
6 Generation Revenues, and thus its GSR, do not incorporate these large capacity values.  
7 In fact, the total base generation revenues AEP Ohio intends to collect from non-  
8 shopping customers in 2012 are only about \$20 million more than AEP Ohio's claimed  
9 capacity costs. The sum of AEP Ohio's claimed capacity costs and its claimed ancillary  
10 service costs alone exceed its total Base Generation Revenues, indicating that AEP  
11 Ohio's base generation service price represents an anticompetitive subsidy.

12 **Q. DOES AEP OHIO PROPOSE TO CHARGE SSO CUSTOMERS AND SHOPPING**  
13 **CUSTOMERS THE SAME PRICE FOR CAPACITY?**

14 A. No. Because AEP Ohio's Base Generation Revenues do not incorporate all of  
15 AEP Ohio's generating costs, it cannot be the case that SSO customers will be charged  
16 the same capacity price as AEP Ohio proposes to charge customers who select  
17 competitive electric service. AEP Ohio is attempting to discriminate against shopping  
18 customers by recovering capacity costs from them that it is not attempting to recover  
19 through its base generation charges to SSO customers. In fact, because AEP Ohio's GSR  
20 is not cost-based, AEP Ohio is incapable of demonstrating that customers paying for  
21 capacity through the GSR are paying an equivalent amount for capacity compared to  
22 what AEP Ohio is seeking to recover from shopping customers.

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<sup>64</sup> See AEP Ohio's February 7, 2011 filing in Case No. 10-2929-EL-UNC.

1 **Q. WHAT IS WRONG WITH AEP OHIO CHARGING SSO CUSTOMERS A**  
2 **LOWER PRICE FOR CAPACITY THAN SHOPPING CUSTOMERS?**

3 A By charging SSO customers less for capacity than shopping customers, AEP Ohio  
4 is foreclosing competition and discriminating against similarly-situated customers. The  
5 only justification for charging a different price would be if the cost of providing capacity  
6 to SSO customers was proportionately lower than the cost of providing capacity to  
7 shopping customers. AEP Ohio presents no evidence of this. Thus, I conclude that AEP  
8 Ohio's proposal to charge shopping customers \$347.97/MW-day is not only unsupported,  
9 as discussed previously, but also discriminatory and anticompetitive.

10 For example, suppose we compare two residential customers, A and B, who are  
11 neighbors and who have identical electric consumption patterns. Suppose customer A  
12 takes SSO service, whereas customer B purchases electricity from a CRES supplier. To  
13 justify charging customer A the lower price for capacity than customer B, it must be the  
14 case that providing capacity for customer B is more expensive than providing capacity  
15 for A. Because the two residential customers have identical consumption patterns, that  
16 cannot be true. Thus, charging them different prices for capacity is anticompetitive and  
17 discriminatory.

18 Because AEP Ohio's base generation revenues incorporate, in theory, all relevant  
19 generating costs, including generation, capacity, and ancillary service costs, the fact that  
20 AEP Ohio's own estimates of its capacity costs exceed Base Generation Revenues is  
21 evidence of an anticompetitive subsidy.

**Q. TO WHAT EXTENT DOES AEP OHIO'S OWN ESTIMATE OF ITS CAPACITY COSTS EXCEED PROPOSED 2012 BASE GENERATION REVENUES?**

A. According to the workpapers of AEP Ohio witness Roush, AEP Ohio's current base generation revenues are \$914,297,892. The proposed 2012 base rates, which are based on 2011 estimates, shows total base generation revenues of \$979,526,334 for AEP Ohio. Table 5 below compares the base generation revenues for each of CSP and OPC with their respective capacity and ancillary service costs.

**Table 5: Base Generation Revenues, Capacity Costs, and Ancillary Service Costs**

Company	BGR, Most Current Rates	BGR Proposed 2012 Rates	Capacity Costs, Calendar Year 2009*	2010 Ancillary Service Costs**	Total Capacity & Ancillary Service Costs	Difference from 2012 BGR
CSP	\$353,167,957	\$424,169,752	\$409,964,536	\$10,484,400	\$420,448,936	\$3,720,816.33
OPC	<u>\$561,129,845</u>	<u>\$555,356,582</u>	<u>\$550,055,784</u>	<u>\$15,617,700</u>	<u>\$565,673,484</u>	<u>(\$10,316,902)</u>
<b>Total AEP Ohio</b>	<b>\$914,297,802</b>	<b>\$979,526,334</b>	<b>\$960,020,320</b>	<b>\$26,102,100</b>	<b>\$986,122,420</b>	<b>(\$6,596,086)</b>

Source: Roush and Thomas workpapers

\* non-shopping loads, as reported in Thomas workpapers

\*\* based on Thomas assumed \$0.60/MWh ancillary cost for 2012-14, Exhibit LJT-1

As this table shows, AEP's claimed 2009 capacity costs of \$960 million, allocated to non-shopping customers are about \$46 million greater than the current Base Generation Revenues of \$914 million and \$19.5 million lower than the proposed 2012 Base Generation Revenues. The fact that AEP Ohio's claimed capacity costs account for 98% of its proposed 2012 Base Generation Revenues clearly raises questions that the Base Generation Revenues do not include all of AEP Ohio's generating costs.

If we add ancillary service costs, based on Thomas's \$0.60/MWh cost value shown in Exhibit LJT-1 and the estimate of non-shopping loads in 2012 shown in her workpapers, then the proposed 2012 Base Generation Revenues are \$6.6 million less than the costs of providing capacity and ancillary services to non-shopping customers, based



on AEP Ohio's own estimates. This means that the Base Generation Revenues cannot possibly include any of the non-fuel variable operation and maintenance ("O&M") costs associated with AEP Ohio's generating fleet, implying that AEP Ohio's Base Generation Revenues, and as a result the proposed GSR, are artificially subsidized and anticompetitive. By keeping its PTC artificially low and instead recovering costs from the various nonbypassable riders it has proposed, AEP Ohio will foreclose competition.

**Q. HOW DID YOU ALLOCATE CAPACITY COSTS TO NON-SHOPPING LOADS SHOWN IN TABLE 5?**

A. To allocate capacity costs to non-shopping loads, I used AEP Ohio's estimate of total non-shopping load for CSP and OPC customers in 2012, and Ms. Thomas's calculated per-MWh capacity cost values for shopping customers, as shown in Table 6.

**Table 6: Non-Shopping Load and Implied Capacity Cost, AEP Ohio**

<b>CSP</b>	<b>Non-shopping Sales 2012 (MWh)</b>	<b>Capacity charge</b>
Res	7,482,100	\$28.49
Com	5,056,500	\$23.03
Ind	4,935,400	\$16.28
<b>Total CSP Capacity Cost</b>		<b>\$409,964,536</b>
<b>OPC</b>	<b>Non-shopping Sales 2012 (MWh)</b>	<b>Capacity charge</b>
Res	7,349,400	\$28.49
Com	5,416,200	\$23.03
Ind	13,263,900	\$16.28
<b>Total OPC Capacity Cost</b>		<b>\$550,055,784</b>
<b>AEP Ohio</b>	<b>Non-shopping Sales 2012 (MWh)</b>	<b>Capacity charge</b>
Res	14,831,500	\$28.49
Com	10,472,700	\$23.03
Ind	18,199,300	\$16.28
<b>Total Capacity Cost</b>		<b>\$960,020,320</b>

Source: Thomas Workpapers

1 I estimated the net capacity costs allocated to CSP and OSP non-shopping customers by  
2 multiplying the 2012 non-shopping sales for each customer class by the average AEP  
3 Ohio capacity prices for the respective class. This implies an allocated capacity cost of  
4 \$960 million to AEP Ohio's non-shopping customers in 2012, which AEP Ohio does not  
5 appear to be including in its Base Generation Revenues. Thus, AEP Ohio is  
6 discriminating against shopping customers by attempting to recover these alleged costs  
7 from them but not from SSO customers.

8 **Q. EVEN IF AEP OHIO IS SUBSIDIZING ITS GSR, DOESN'T THAT BENEFIT**  
9 **SSO CUSTOMERS WHO WILL THEREFORE PAY LESS?**

10 A. No. While subsidies can provide temporary benefits, artificial constraints on  
11 prices foreclose competition and ultimately make customers worse off. By forcing out  
12 competitive suppliers from the market, supply is reduced, which leads to higher prices.

13 **Q. HOW DOES A BELOW-COST GSR FORECLOSE COMPETITION?**

14 A. By shifting its generation costs out of the GSR and into its many nonbypassable  
15 riders (as well as by shifting capacity costs away from SSO customers directly to  
16 shopping customers), AEP Ohio directly forecloses competition by keeping its PTC  
17 artificially low. This, in turn, keeps consumers' total electricity prices artificially high  
18 because an artificially low PTC prevents competitive suppliers from being able to provide  
19 a price to customers below that PTC on an "apples to apples" basis. AEP Ohio intends to  
20 recover a substantial portion of its generation costs, and much more, through its many  
21 nonbypassable riders, which AEP Ohio attempts to justify under an economic  
22 development aura. AEP Ohio never mentions the adverse economic impacts of

1 uneconomic generation investments on the Ohio economy, something I discuss in Section  
2 IV of my testimony.

3 **Q WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

4 A. I recommend that AEP Ohio be prohibited from charging shopping customers  
5 more than the PJM RPM market price for capacity. Whereas AEP Ohio is insistent that it  
6 is collecting capacity from its SSO customers on a non-cost basis, AEP Ohio cannot  
7 prove what it is charging its SSO customers for that capacity. Thus, I recommend that  
8 the Commission order AEP Ohio to continue to use the PJM RPM market prices as the  
9 default capacity charges to shopping customers.

10 I also recommend that AEP Ohio's GSR be adjusted upward to reflect the  
11 generation costs that AEP Ohio seeks to recover from SSO customers. Doing this,  
12 instead of shifting those costs to nonbypassable riders in an effort to foreclose  
13 competition, will send the proper price signals to those customers regarding AEP Ohio's  
14 actual costs for providing generation service.

15 **B. AEP Ohio's Proposed "Market-Based" Cost Allocation is Flawed**

16 **Q. BY WHAT AMOUNTS DOES AEP PROPOSE TO INCREASE BASE**  
17 **GENERATION REVENUES OVER THE CURRENT BASE GENERATION**  
18 **REVENUES?**

19 A. According to Exhibit DMR-2, AEP is proposing to increase current Base  
20 Generation Revenues ("BGR") by \$65,255,250, from \$914,297,802 to \$979,563,052 in  
21 2012. This is a 7.14% increase. For 2013, AEP proposes to increase BGR by an  
22 additional 10.78%, or to just under \$1.1 billion.

1 **Q. DOES AEP OHIO PROPOSE TO INCREASE BASE GENERATION REVENUES**  
2 **BY EQUAL PERCENTAGES FOR CSP AND OPC CUSTOMERS?**

3 A. No. As shown in Table 7, AEP proposes to increase BGR in 2012 from current  
4 levels by over 20% for CSP customers, while reducing BGR revenues for OPC customers  
5 by just over 1.0%. Then, from 2012 to 2013, AEP proposes to increase BGR by 10.78%  
6 for both companies.

7 **Table 7: Base Generation Revenues – Current and 2012 Proposed**

	CSP	OPC	Total AEP Ohio
<b>Current Revenues</b>	\$353,167,957	<u>\$561,129,845</u>	\$914,297,802
<b>Proposed 2012</b>	\$424,169,752	<u>\$555,356,582</u>	\$979,526,334
<b>Difference</b>	\$71,001,795	<u>(\$5,773,243)</u>	\$65,228,552
<b>Pct Change</b>	20.10%	-1.03%	7.13%
<b>Proposed 2013</b>	\$469,891,450	\$615,212,128	\$1,085,103,578
<b>Difference</b>	\$45,721,698	\$59,855,546	\$105,577,244
<b>Pct Change</b>	10.78%	10.78%	10.78%

8 Source: Roush workpapers

9 **Q. IS THE DECREASE IN 2012 BGR REVENUES FROM THE CURRENT BASE**  
10 **RATES FOR OPC THE RESULT OF DECREASING OVERALL SALES?**

11 A. No. As shown in Table 8, AEP forecasts CSP's loads to increase, on average, by  
12 0.68% between 2011 and 2012, whereas AEP forecasts OPC's loads to increase, on  
13 average, 0.75%.

**Table 8: Projected Loads by Customer Class – CSP and OPC (MWh)**

	Residential	Commercial	Industrial	Other	Total
<b>CSP</b>					
2011	7,491,378	8,648,599	4,867,131	56,436	21,063,544
<u>2012</u>	<u>7,481,997</u>	<u>8,732,396</u>	<u>4,935,334</u>	<u>56,821</u>	<u>21,206,548</u>
Percent Change	-0.13%	0.97%	1.40%	0.68%	0.68%
<b>OPC</b>					
2011	7,494,267	5,693,938	13,008,316	76,183	26,272,704
<u>2012</u>	<u>7,349,471</u>	<u>5,780,129</u>	<u>13,263,965</u>	<u>75,862</u>	<u>26,469,427</u>
Percent Change	-1.93%	1.51%	1.97%	-0.42%	0.75%
<b>AEP Ohio Total</b>					
2011	14,985,645	14,342,537	17,875,447	132,619	47,336,248
<u>2012</u>	<u>14,831,468</u>	<u>14,512,525</u>	<u>18,199,299</u>	<u>132,683</u>	<u>47,675,975</u>
Percent Change	-1.03%	1.19%	1.81%	0.05%	0.72%

Source: AEP 2011 LTFR-MWh Forecast

**Q. WHAT IS THE BASIS FOR THESE PERCENTAGE COST INCREASES TO BASE GENERATION REVENUES?**

A. Mr. Roush's testimony is that "CSP and OPCo's last rate cases were in the early 1990's. Since that time the Company's rates have been unbundled into generation, transmission and distribution components and subsequently adjusted based upon percentage adjustments to the then current unbundled rates."<sup>65</sup>

**Q. DO YOU CONSIDER MR. ROUSH'S EXPLANATION TO BE COMPLETE?**

A. No. Mr. Roush's explanation makes no sense, as it fails to address how AEP determined the revenue increase itself. Instead, Mr. Roush states that AEP increased the rates uniformly for each rate class from 2012 to 2013-14, based on how "the market

<sup>65</sup> *Id.* at 9:21-10:1.

1 would price such loads,”<sup>66</sup> using the methodology developed by Ms. Thomas.<sup>67</sup>

2 However, Ms. Thomas’s methodology has very little to do with market prices, but instead  
3 represents a mix of AEP’s own costs and Ms. Thomas’s undocumented judgments.

4 **Q. DO YOU HAVE AN OPINION AS TO WHAT THE IMPACT IS OF THE**  
5 **DIFFERENCES IN BASE GENERATION REVENUES FOR CSP AND OPC?**

6 A. Yes. Because about half of OPC’s loads are classified as Industrial, the apparent  
7 impact is that AEP Ohio will foreclose competition for those industrial loads by  
8 allocating significant portions of OPC’s generating costs to CSP customers, especially  
9 CSP’s residential customers. This can be seen by examining the proposed BGR  
10 allocations to the different customer classes for each utility in the current year and as  
11 proposed for 2012, as shown in Table 9.

12 Table 9 illustrates the change in base generation revenues for the four largest  
13 dollar rate classes: Residential Service (RS), General Service – Low Load Factor –  
14 Secondary Voltage (GS-2), General Service – Medium/High Load Factor – Secondary  
15 Voltage (GS-3), and General Service – Large Interruptible Power – Transmission Voltage  
16 (GS-4/IRP-D). In each case, total sales are assumed to be the values shown under  
17 “Current Base Rates” in the Roush workpapers.

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<sup>66</sup> *Id.* at 10:6-7.

<sup>67</sup> See Columbus Southern Power Company’s and Ohio Power Company’s Response to FES’s 9th set INT-9-004 (attached as Exhibit JAL-13), where Mr. Roush states that this uniform increase does not have a cost basis.

**Table 9: Change in Base Generation Revenues – Major Rate Classes**

<b>Company/Rate Class</b>	<b>Current Base Rates</b>	<b>Proposed 2012</b>	<b>Difference</b>	<b>Pct Change</b>
<b><u>CSP</u></b>				
<u>RS</u>	\$132,159,493	\$200,185,639	\$68,026,146	51.5%
GS-2	\$45,420,946	\$24,557,237	(\$20,863,709)	-45.9%
GS-3	\$69,593,005	\$62,575,987	(\$7,017,018)	-10.1%
GS-4/IRP-D	\$34,820,356	\$62,247,028	\$27,426,672	78.8%
<b><u>OPC</u></b>				
<u>RS</u>	\$176,778,209	\$224,664,975	\$47,886,766	27.1%
GS-2	\$79,145,141	\$63,215,872	(\$15,929,269)	-20.1%
GS-3	\$55,780,599	\$53,971,852	(\$1,808,747)	-3.2%
GS-4/IRP-D	\$84,060,456	\$73,990,384	(\$10,070,072)	-12.0%
Source: Roush Workpapers				

As can be seen in Table 9, AEP Ohio proposes to increase BGR allocated to residential customers of CSP by over 51%, and increase the allocation of BGR to CSP residential customers by 27%. On the other hand, revenues allocated to GS-2 (Commercial) will decrease by 46% and 20% for CSP and OSP customers, respectively. Perhaps the strangest of all is that, for CSP, base generation revenues allocated to large interruptible customers increase 78%, while large interruptible customers of OPC see their allocation decrease by 12%.

The proposed allocation of base generation revenues to the different rate classes defies any cost-based explanation. Instead, other than the incongruous increase in the base generation costs allocated to CSP's GS-4/IRP-D customers, it appears to be an attempt by AEP to foreclose market competition by reducing costs allocated to the large

commercial and industrial customers who are most likely to switch to competitive electric suppliers, while increasing costs to residential customers who are least likely to switch.

**Q. HAVE YOU IDENTIFIED ANY OTHER RATE DESIGN ISSUES WITH THE GSR?**

A. Yes. AEP Ohio does not intend to allocate the cost of the GSR to different rate classes based on traditional ratemaking principles. According to AEP Ohio witness Roush, the company's rates, "reflect an amalgamation of very old cost relationships, including any historical levels of cross-subsidization among tariff classes."<sup>68</sup> Thus, he proposes that AEP Ohio, "rationalize the rate relationships based upon the manner in which the market would price such loads using the same methodology used by Company witness Thomas to develop the competitive benchmark price and applying it to the class load shapes."<sup>69</sup>

What this means is that AEP Ohio somehow established the relative rates customers in different rate classes should be charged, based on AEP Ohio witness Thomas's "methodology" discussed above. For example, Ms. Thomas determined that the average residential "market price" in 2012 should be 13.1% greater than the average commercial "market price," and 26.8% greater than the average industrial "market price."<sup>70</sup> (For January 2013 – May 2014, she determined that the residential price should be 13.2% and 24.4% higher than the commercial and industrial prices, respectively.) Mr. Roush used these relative rates to determine the actual \$/kWh rates based on its "requested average generation price."

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<sup>68</sup> Roush Direct at 10:1-2.

<sup>69</sup> *Id.* at 10:5-9.

<sup>70</sup> Exhibit LJT-1.



1 **Q. DO YOU CONSIDER THE METHODOLOGY USED TO DEVELOP RELATIVE**  
2 **PRICES BY RATE CLASS A VALID METHODOLOGY FOR ALLOCATING**  
3 **COSTS BETWEEN RATE CLASSES?**

4 A. No. The methodology used by Ms. Thomas to determine “benchmark” market  
5 prices by customer class suffers from irreparable methodological and data flaws as  
6 discussed above and in Mr. Schnitzer’s testimony. Because the resulting relative rates for  
7 Residential, Commercial, and Industrial customers are invalid, those relative rates cannot  
8 be used legitimately to allocate generation costs among those three rate classes. Nor does  
9 Ms. Thomas demonstrate that the publicly available information she relies upon is a  
10 legitimate method for allocating costs to different rate classes. As such, her approach to  
11 calculating components is irrelevant for allocating GSR costs and setting GSR rates for  
12 different customer classes. If GSR costs are cost-based, then they should be allocated to  
13 individual customer classes based on traditional cost-allocation methodologies used for  
14 Cost of Service (“COS”) ratemaking. AEP Ohio fails to provide any evidence that it has  
15 allocated costs in this manner. Therefore, its proposed allocation of GSR costs is not  
16 reasonable.

17 **Q. GIVEN THAT THE GSR IS NOT COST-BASED, HOW DOES THIS AFFECT**  
18 **THE OTHER RIDERS PROPOSED BY AEP OHIO?**

19 A. Because the GSR is not cost-based, any additional generation costs that AEP Ohio  
20 seeks to “recover” through the multitude of nonbypassable riders other than its GSR are  
21 not justified. The nonbypassable riders requested by AEP Ohio are designed to recover  
22 certain generation-related costs it claims it is incurring or will incur. However, AEP  
23 Ohio has not and cannot show that it is not already recovering those claimed costs  
24 through the GSR because the GSR is not cost-based and “AEP Ohio has not conducted a

1 cost of service study for unbundled generation service.”<sup>71</sup> Put another way, because the  
2 GSR is designed to recover AEP Ohio’s base generation costs and because AEP Ohio  
3 admits that the GSR includes AEP Ohio’s costs of energy, capacity, and ancillary  
4 services,<sup>72</sup> any additional generation costs that AEP Ohio believes are not being  
5 recovered through the GSR, which is bypassable, should be included in the GSR and the  
6 rates adjusted accordingly.

7 **Q. WHAT OTHER RATE ADJUSTMENT MECHANISMS ARE BEING USED BY**  
8 **AEP OHIO TO ADJUST PRICING?**

9 A. First, the Market Transition Rider (“MTR”) is a nonbypassable rider that is  
10 supposed to assist in the transition to AEP Ohio’s new “market based” rate structure.  
11 AEP Ohio states that the MTR is “designed to limit the first and second year changes for  
12 any customer classes to uniformly transition any above- or below-average changes in  
13 three steps.”<sup>73</sup> Its effect is to somewhat soften the increases or decreases described  
14 above.

15 Second, AEP Ohio is offering discounted rates through its Rate Security Rider  
16 (“RSR”) of up to 15% for certain large commercial and industrial customers who promise  
17 to remain AEP Ohio customers through May 2017. The discount would be 15% off the  
18 current generation rate through the term of the ESP, which decreases 5% per year off the  
19 May 2014 SSO rate for the remaining three years of the offer. This option is not offered  
20 on a rate class basis but is limited by AEP Ohio to certain SIC codes and is only available

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<sup>71</sup> FES INT-4-005 (attached as Exhibit JAL-10); FES-INT-4-015 (attached as Exhibit JAL-11).

<sup>72</sup> FES-INT-4-005 (attached as Exhibit JAL-10); FES-INT-4-015 (attached as Exhibit JAL-11).

<sup>73</sup> Roush Direct at 11:12-14.

1 to customers with annual peak demands greater than 200 kW on a first come, first served  
2 basis up to 2,500 GWh.

3 **Q. WHEN YOU TAKE INTO ACCOUNT THE GSR, ALLOCATION ISSUES, MTR**  
4 **AND RSR DESCRIBED ABOVE, WHAT IMPACT DO YOU EXPECT THIS TO**  
5 **HAVE ON SHOPPING IN THE MAJOR RATE CLASSES?**

6 A. AEP Ohio's rate design lowers rates in those classes most likely to shop, while  
7 increasing rates in those classes least likely to shop. Whether intentional or otherwise,  
8 AEP Ohio's so-called "market based" prices are not designed to better reflect the market  
9 but instead to prevent as many of its customers as possible from participating in the  
10 market.

11 **Q. ISN'T THE PROPOSED RSR GOOD FOR COMPETITION BECAUSE IT CAN**  
12 **BE VIEWED AS ANOTHER COMPETITIVE OFFER FOR LARGE**  
13 **CUSTOMERS?**

14 A. No. The proposed Rate Security Rider, which will be offered only to large  
15 commercial and industrial customers who commit to take service from AEP Ohio through  
16 May 2017, is anti-competitive. By itself, a generation provider offering a discounted rate  
17 to entice certain customers to purchase electricity from it is not problematic. However, in  
18 AEP Ohio's case, the rate subsidy to be offered is a cross-subsidy from other AEP Ohio  
19 customers and, especially, from other AEP Ohio customers that buy their electricity from  
20 CRES suppliers.<sup>74</sup> The GSR is already unreasonably low and designed to provide AEP  
21 Ohio with an unfair competitive advantage. Offering certain customers a further 15%  
22 discount off the already-subsidized GSR is a further attempt to foreclose competition.

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<sup>74</sup> AEP Ohio contends the discount is paid for by shareholders. However, AEP Ohio proposes to levy its POLR charge on these same RSR customers, despite those customers agreeing to stay with the company. Thus, RSR customers will compensate AEP Ohio for the rider through the POLR charge. Moreover, by levying various nonbypassable charges on all customers, AEP Ohio is positioned to recoup any lost revenues from the RSR.

1 A CRES supplier can certainly offer to “discount” prices for certain customers in  
2 order to attract their business. However, this is where the similarity to AEP Ohio ends.  
3 CRES suppliers, whose prices are determined by the interaction of market supply and  
4 demand, cannot arbitrarily allocate costs to other customers, nor seek to impose various  
5 riders that guarantee cost recovery and maximize revenues.

6 **C. AEP Ohio’s Nonbypassable Riders Are Anti-Competitive and**  
7 **Unjustified**

8 **Q. DO YOU HAVE AN OPINION REGARDING WHETHER THE**  
9 **NONBYPASSABLE RIDERS YOU LIST ABOVE ON PAGE 38 OF YOUR**  
10 **TESTIMONY ARE JUSTIFIED OR REASONABLE?**

11 A. Yes, I do.

12 **Q. WHAT IS YOUR OPINION?**

13 A. AEP Ohio has not justified including in its rate design nonbypassable riders for  
14 carbon capture and sequestration costs (CCSR), environmental capital and O&M costs  
15 (EICCR), future plant closure costs (FCCR), generating facility costs (GRR), market  
16 transition rate adjustments (MTR), NERC-related costs (NERCR), or POLR costs  
17 (POLR).

18 **Q. CAN AEP OHIO REQUIRE ALL OF ITS DISTRIBUTION CUSTOMERS TO**  
19 **PAY FOR A COMPETITIVE GENERATION SERVICE?**

20 A. AEP Ohio generally is prohibited from using revenues from its distribution  
21 customers to subsidize the cost of providing a competitive generation-service component.  
22 A nonbypassable charge to support generation service is authorized in an ESP only in  
23 narrow circumstances, which haven’t been satisfied here for any of the proposed riders.  
24 This holds true for the CCSR, EICCR, FCCR, GRR and NERCR, as each of these riders

1 improperly seeks to subsidize competitive generation service through a charge on all  
2 distribution customers and do not fall within any of the nine categories in R.C.  
3 4928.143(B)(2). Similarly, AEP Ohio cannot recover the costs of competitive generation  
4 service through its POLR Charge, which must be limited to recovery of the  
5 noncompetitive costs shown by AEP Ohio to be associated with fulfillment of its POLR  
6 obligation.

7 *1. Carbon Capture and Sequestration Rider – CCSR*

8 **Q. WHY IS THE CCSR NOT JUSTIFIED?**

9 A. The CCSR initially is intended to allow AEP Ohio to recover a portion of the  
10 front-end engineering costs of the CCS project that may be constructed at AEP's  
11 Mountaineer Generating Station in West Virginia, after which AEP Ohio may seek to  
12 recover its share of the construction and operation costs of this project.<sup>75</sup> The CCSR is  
13 an anti-competitive nonbypassable rider designed to impose on Ohio consumers the costs  
14 of research and preliminary design work associated with a project that may not be built  
15 and, if it is built, will not be built in Ohio.<sup>76</sup> Furthermore, on July 14, 2011, AEP issued a  
16 press release stating that it was putting development of the CCS project "on hold"  
17 because of uncertain future climate regulations and the weak economy.<sup>77</sup> In light of  
18 AEP's announcement, there is no justification for the CCSR whatsoever.

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<sup>75</sup> Direct Testimony of Phillip Nelson on Behalf of Columbus Southern Power Company and Ohio Power Company, January 27, 2010 ("Nelson Direct"), at 18:9 – 21:5.

<sup>76</sup> See *id.*, at 19:4-18 (describing "deliverables" of CCS FEED Study).

<sup>77</sup> "AEP Places Carbon Capture Commercialization On Hold, Citing Uncertain Status Of Climate Policy, Weak Economy," July 14, 2011. Available at: <http://www.aep.com/newsroom/newsreleases/?id=1704>.

1 **Q. WHAT REASONS DOES AEP OHIO OFFER FOR WHY THE CCSR SHOULD**  
2 **BE NONBYPASSABLE?**

3 A. AEP Ohio witness Nelson offers three reasons why the CCSR should be  
4 nonbypassable: “a) coal is an essential part of the current and future generation of  
5 electricity because of its abundance and versatility; b) the coal industry plays a significant  
6 role in the economy by the creation of jobs, and; c) it provides a promising way of  
7 addressing current and future greenhouse gas regulation/legislation.”<sup>78</sup>

8 **Q. ARE THESE LEGITIMATE REGULATORY OR ECONOMIC REASONS TO**  
9 **IMPOSE A NONBYPASSABLE CHARGE ON ALL CUSTOMERS?**

10 A. No. AEP Ohio has not shown that this charge it seeks to impose on its  
11 distribution customers for the cost of competitive generation service falls within one of  
12 the categories of nonbypassable cost recovery authorized by R.C. 4928.143(B)(2).<sup>79</sup> So  
13 this charge cannot be nonbypassable. AEP Ohio witness Nelson asks that the CCSR be  
14 nonbypassable,<sup>80</sup> but fails to offer any basis for making this rider nonbypassable. To the  
15 extent AEP Ohio intends that the CCSR be a vehicle for obtaining a reasonable allowance  
16 for construction work in progress (“CWIP”) for the FEED Study under R.C.  
17 4928.143(B)(2)(b), Mr. Nelson has made no effort whatsoever to show that the claimed  
18 costs are recoverable as a reasonable allowance for CWIP,<sup>81</sup> and he has not shown that  
19 these costs are recoverable on a nonbypassable basis under any other provision of Ohio  
20 law. In fact, the costs of preliminary engineering and the preparation of cost estimates, a

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<sup>78</sup> Nelson Direct, at 19:22 – 20:3.

<sup>79</sup> See R.C. 4928.02(H); *In re Application of Columbus S. Power Co.*, 2011 WL 1519107, 2011-Ohio-1788, ¶¶ 31-35 (Ohio April 19, 2011).

<sup>80</sup> Nelson Direct at 21:3.

<sup>81</sup> See Columbus Southern Power Company’s and Ohio Power Company’s Response to IEU-Ohio’s 4th set INT-166 (attached as Exhibit JAL-14) (AEP has not identified for each project the amount that is or is not CWIP).

1 NEPA impact statement, and a geologic characterization study are not CWIP because  
2 CWIP represents costs directly related to construction of a generating asset. Because the  
3 FEED Study work does not qualify as CWIP, AEP Ohio cannot receive a reasonable  
4 allowance for CWIP under the CCSR. Moreover, AEP Ohio has not shown that the CCS  
5 project is needed or that it was competitively bid.

6 **Q. IS IT REASONABLE TO ASK ALL DISTRIBUTION CUSTOMERS TO PAY**  
7 **FOR AEP OHIO'S CCS FEED STUDY?**

8 A. No. If carbon emissions regulations develop, and if the CCS facility proves  
9 economically viable under future greenhouse gas legislation, AEP Ohio may gain an  
10 advantage over competitive suppliers through its participation in the project. AEP Ohio  
11 should not be allowed to force all customers, including those who wish to purchase  
12 electricity from competitive electric suppliers, to pay \$1.6 million in 2012 for engineering  
13 costs or the estimated \$46 million in total capital costs if the project is resurrected in the  
14 future, so it can gain that competitive advantage. In the end, the market will decide  
15 whether the CCS project is economically viable. A subsidy imposed on distribution  
16 customers will only prevent the market from functioning properly.

17 **Q. IS THE CCS PROJECT PRUDENT AND USED-AND-USEFUL IN A**  
18 **RATEMAKING SENSE?**

19 A. No. The CCS project is not used and useful in a ratemaking sense and therefore  
20 would not ever be recoverable under traditional utility regulation. First, there is no  
21 guarantee that the CCS project will ever be built, especially if the results of the  
22 engineering study are not favorable. Second, if the project is built, there is no guarantee  
23 that the current estimate of its construction cost is accurate. Third, if there is no climate  
24 legislation, then it is not at all clear that construction of a CCS project designed to capture

1 carbon emissions will be prudent. Fourth, as AEP announced on July 14, 2011, the  
2 project has been put “on hold,” and, thus, is not used-and-useful at this time.<sup>82</sup>

3 **Q. IS MR. NELSON CORRECT THAT AEP OHIO’S DISTRIBUTION**  
4 **CUSTOMERS SHOULD PAY FOR THE CCS PROJECT BECAUSE IT WILL**  
5 **CREATE JOBS?**

6 A. No. There are no potential job creation benefits of this project. The project is  
7 located in West Virginia and AEP Ohio offers no evidence of any job creation benefits  
8 accruing to Ohio. And again, given that AEP has placed the project “on hold,” there will  
9 obviously not be any jobs created from construction of the project.

10 **2. Environmental Investment Carrying Cost Rider – EICCR**

11 **Q. IS THE PROPOSED NONBYPASSABLE EICCR JUSTIFIED?**

12 A. No, not as a cost-based nonbypassable rider as AEP Ohio has proposed it. AEP  
13 Ohio proposes to charge to recover all capital investments in pollution control equipment  
14 on its generating plants (both recovery of capital, typically achieved through depreciation  
15 charges, and a return on its capital investment) from January 1, 2009 forward with this  
16 rider.<sup>83</sup> AEP Ohio also proposes to include O&M expenses in this rider beginning in  
17 2012.<sup>84</sup> AEP Ohio estimated at the time it filed its application that its 2012 EICCR will  
18 recover (and earn a return on) environmental capital expenditures of approximately \$461  
19 million.<sup>85</sup> Its total expenditures and corresponding revenue requirement for future years

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<sup>82</sup> Hamrock Direct at 33:12-13.

<sup>83</sup> See Nelson Direct at 16-18, 27.

<sup>84</sup> *Id.* at 16:17-21.

<sup>85</sup> Direct Testimony of Andrea E. Moore, on behalf of Columbus Southern Power Company and Ohio Power Company, January 27, 2011 (“Moore Direct”), at Exh. AEM-1.



1 are undefined.<sup>86</sup> Although AEP Ohio attempts to wrap the proposed EICCR in the  
2 economic development flag, the rider is anti-competitive and amounts to an unlawful  
3 cross-subsidy, as it forces customers who choose competitive retail electric suppliers to  
4 pay for AEP Ohio's current and future costs to meet the environmental compliance costs  
5 related to AEP Ohio's provision of competitive generation service. Further, it does not fit  
6 within any of the categories of nonbypassable cost recovery in R.C. 4928.143(B)(2).

7 **Q. WHAT ARGUMENTS DOES AEP OHIO ADVANCE TO MAKE THIS RIDER**  
8 **NONBYPASSABLE AND TO BASE IT ON FORECASTED ENVIRONMENTAL**  
9 **INVESTMENTS?**

10 A. According to AEP Ohio witness Nelson:

11 The Company believes it is in the best interests of Ohio retail ratepayers  
12 for the Company to be able to recover environmental investments from the  
13 total retail customer base. If environmental recovery becomes uncertain,  
14 the risk of making significant new environmental investment increases,  
15 and it may result in additional or earlier retirements of generating  
16 facilities. This may put pressure on generation supply in Ohio and may  
17 result in higher market prices.<sup>87</sup>

18 **Q. ARE THESE LEGITIMATE REASONS TO MAKE THE EICCR**  
19 **NONBYPASSABLE?**

20 A. No. Mr. Nelson's arguments ignore the fact that these costs cannot be recovered  
21 on a nonbypassable basis under R.C. 4928.143, are self-serving, make no economic  
22 sense, and seek to mask imposition of an anti-competitive charge on customers who  
23 purchase electricity from competitive electric suppliers. He argues that, if AEP Ohio is  
24 not guaranteed recovery of its environmental capital costs, there will be increasing  
25 uncertainty as to whether AEP Ohio maintains or shuts generating plants. In other

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<sup>86</sup> See Columbus Southern Power Company's and Ohio Power Company's Response to IEU-Ohio's 4th set INT-073 (attached as Exhibit JAL-15).

<sup>87</sup> Nelson Direct at 15:23 - 16:6.

1 words, if AEP Ohio is not guaranteed cost recovery, even if recovery of such costs  
2 simply keeps uneconomic facilities operating, it may be forced to determine whether such  
3 generating plants are worth operating. These are exactly the same decisions that  
4 competitive generation companies must make all the time.

5 Mr. Nelson also argues that, if these plants close, electric prices may increase.  
6 However, obsolete generating plants close all the time, and can be replaced by modern  
7 plants having lower operating costs. Mr. Nelson wishes to distort the competitive  
8 generation market by forcing all customers to subsidize AEP Ohio's inefficient  
9 generating facilities, thereby preventing new entry by more efficient facilities. I call this  
10 "Gresham's Law of Generation," in which bad investments (AEP Ohio's) in uneconomic  
11 generation drive out investment in efficient new generating facilities.<sup>88</sup> Additionally, to  
12 the extent AEP Ohio has above-average environmental compliance costs, artificially  
13 subsidizing this investment will result in higher prices than otherwise would result if  
14 customers could pay market prices which reflect average-level environmental compliance  
15 costs. AEP Ohio will reap the benefits under its proposed ESP as follows. First, it  
16 recovers all of its environmental compliance costs from distribution customers, who must  
17 pay the EICCR. Second, it forecloses market competition, because distribution customers  
18 will not wish to pay for both AEP Ohio's environmental compliance costs and CRES  
19 providers' costs. Third, the artificial subsidy AEP Ohio receives will drive out  
20 competitive generators, who cannot rely on subsidies, thus increasing market prices and  
21 allowing AEP Ohio to capture additional margin from its off-system sales, presumably at  
22 market prices reflecting environmental costs. Thus, it will not be AEP Ohio's customers

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<sup>88</sup> I discuss this in greater detail in Section IV. See also, J. Lesser, "Gresham's Law of Green Energy," *Regulation*, Winter 2010-2011, 10-18.

1 who benefit. Rather, it will simply boost AEP Ohio's profits while foreclosing  
2 competition.

3 **Q. WHAT IS YOUR OPINION OF MR. NELSON'S REQUEST TO MAKE THE**  
4 **EICCR NONBYPASSABLE "AS CONTEMPLATED BY SECTION**  
5 **4928.143(B)(2)(B)"?**

6 A. Mr. Nelson does not explain why nonbypassable cost recovery of all  
7 environmental expenditures and related O&M is "contemplated" by R.C.  
8 4928.143(B)(2)(b), and he makes no effort to satisfy the conditions for a nonbypassable  
9 rider set out in that subsection.<sup>89</sup> He does not show that he is requesting a reasonable  
10 allowance for CWIP, or that the costs to be recovered through the EICCR satisfy  
11 applicable CWIP allowance limitations. To the contrary, it is clear from his testimony  
12 that AEP Ohio seeks through the EICCR to rate-base all of its environmental capital costs  
13 and related O&M; it is not seeking a reasonable allowance for CWIP. Thus, recovery of  
14 these costs on a nonbypassable basis is neither contemplated nor authorized by R.C.  
15 4928.143(B)(2)(b). I also am not aware of any other provision of Ohio law that would  
16 authorize AEP Ohio to recover these generation costs on a nonbypassable basis.

17 Moreover, from a policy perspective, the dynamic AEP Ohio seeks to impose on  
18 customers is one where they pay all the costs, but AEP Ohio recovers all the benefits  
19 because it has not promised to dedicate to customers the energy and capacity for the life  
20 of the facility that will receive the subsidized environmental upgrades. In fact, AEP Ohio

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<sup>89</sup> See Nelson Direct at 16:22-23.

1 even seeks to retain all the revenue from the excess generation that would be sold at  
2 market or competitively used to serve non-AEP Ohio customers.<sup>90</sup>

3 **Q. DO YOU BELIEVE ALL OF THE COSTS PROPOSED TO BE RECOVERED**  
4 **UNDER THIS RIDER ARE RELATED TO CARRYING COSTS AS THE NAME**  
5 **OF THE RIDER WOULD IMPLY?**

6 A. Absolutely not. Under the EICCR, AEP Ohio is proposing to recover a return on  
7 its investment, along with depreciation, associated income taxes, other taxes (excluding  
8 property taxes), an administrative and general component, and operation and maintenance  
9 expenses. AEP Ohio is not proposing to merely recover its carrying costs.

10 **Q. BASED ON YOUR EXPERIENCE IN THE INDUSTRY, WHAT DOES THE**  
11 **TERM “CARRYING COST” OR “CARRYING CHARGE” MEAN?**

12 A. In my experience, the term “carrying charge,” as applied to building a new  
13 electric generating plant, typically would include debt service, property and income taxes,  
14 and insurance costs incurred between the time an asset is recognized and the time its  
15 costs are recovered. Carrying charges may also include a return on equity investment.  
16 Thus, for example, a CWIP allowance is applied until a generating plant goes into  
17 service, at which time the plant’s costs (*e.g.*, return on capital investment, depreciation,  
18 O&M expenses, taxes, etc.) would be recovered. A carrying charge is not meant to  
19 cover the costs associated with depreciation expense, administrative and general  
20 expenses, and operation and maintenance expenses. These are not carrying costs.

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<sup>90</sup> See Columbus Southern Power Company’s and Ohio Power Company’s Response to OCC’s 4th set INT-136 (attached as Exhibit JAL-8).

1 **Q. IS THAT ALSO THE MEANING FOR CARRYING CHARGES USED IN THE**  
2 **ACCOUNTING INDUSTRY?**

3 A. Yes it is. For example, the Financial Accounting Standards Board ("FASB")  
4 Accounting Standards Codification #980-360-35-7 states: "During the period between the  
5 date on which the new asset is recognized and the date on which recovery begins, the  
6 carrying amount shall be increased by accruing a carrying charge. ... If full return on  
7 investment is to be provided, a rate equal to the allowed overall cost of capital in the  
8 jurisdiction in which recovery is expected shall be used." This definition is similar to my  
9 understanding of the use of the term in the industry.

10 **Q. DOES AEP OHIO APPLY THIS DEFINITION TO CARRYING COSTS FOR**  
11 **THE EICCR?**

12 A. No. According to AEP Ohio witness Mitchell, carrying costs for the EICCR are  
13 not based on FASB ASC 980.<sup>91</sup> Instead, the carrying charge of 14.11%, as applied by  
14 AEP Ohio witness Moore, is based on AEP Witness Nelson's Exhibit PJN-2 for a 25-  
15 year investment, adjusted to remove property taxes.<sup>92</sup> As Mr. Nelson's exhibit shows, his  
16 carrying charge estimates include an overall return on investment, depreciation, income  
17 taxes, A&G expenses, and property taxes. Thus, the "carrying charge" estimated by Mr.  
18 Nelson effectively determines a levelized revenue requirement.

19 **Q. WILL THE PROPOSED EICCR DOUBLE-RECOVER COSTS?**

20 A. Yes, if the EICCR is nonbypassable. The EICCR may allow AEP Ohio to  
21 double-recover because AEP Ohio includes environmental capital costs in its capacity  
22 cost estimates for CRES that also appear to be included in the EICCR. This can be seen

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<sup>91</sup> Mitchell Direct at 9:18-20.

<sup>92</sup> Exhibit AEM-1 at 1, line 6.

1 in AEP Ohio's capacity cost filing in Case No. 10-2929-EL-UNC. Specifically, page 5  
2 of Attachment A, Part 1 of AEP Ohio's January 7, 2011 filing shows \$43.9 million in  
3 "Pollution Control CWIP" costs for OPC's generating plants in 2009. Similarly, page 5  
4 of Attachment A, Part 2 of this same filing shows \$4.3 million in Pollution Control CWIP  
5 costs for CSP's generating plants in 2009. Other in-service pollution control capital  
6 investments made by AEP Ohio appear to be included in its overall 2009 capacity-related  
7 net GPIS, yet Ms. Moore's Exhibit AEM-1, line 1, includes \$222.8 million of  
8 environmental capital costs from which the EICCR "capital carrying cost" (line 7) is  
9 determined. Thus, AEP Ohio appears to be attempting to double-recover these costs.

10 **Q. WILL FORCING ALL CUSTOMERS TO SUBSIDIZE AEP'S**  
11 **ENVIRONMENTAL INVESTMENTS SAVE OHIO JOBS?**

12 A. No. Forcing all customers to subsidize AEP Ohio's environmental investments in  
13 old, inefficient generating plants may "save" jobs of some AEP Ohio workers at the  
14 affected facilities, at least temporarily. However, imposing these costs on all of AEP  
15 Ohio's distribution customers will result in uneconomic generation investments and cause  
16 a loss of jobs. Businesses that are forced to pay for uneconomic generation investments  
17 will have less money to purchase other goods and services and to invest in expanding  
18 their facilities. Similarly, consumers who must pay for uneconomic generation  
19 investments have less disposable income to spend on other goods and services. As I  
20 discuss in Section IV below, these impacts will ripple through the Ohio economy,  
21 causing much greater job losses than jobs "saved."

22 Mr. Nelson simply asserts that "it is in the best interests of Ohio retail ratepayers  
23 for the company to be able to recover environmental investments from the total retail  
24 customer base." However, nowhere does he explain why this is so. If AEP Ohio

1 continues to recover these costs through a bypassable rider, it is still “guaranteed”  
2 recovery from customers who choose to remain with AEP Ohio. That, of course, is the  
3 real issue.

4 If AEP Ohio customers are forced to bear all of these costs, but could avoid them  
5 by shopping with a different supplier, they will be more inclined to switch to competitive  
6 electric suppliers who operate more efficient, lower-cost generating units, thus depriving  
7 AEP Ohio of a revenue stream. To foreclose this possibility, AEP Ohio seeks to impose  
8 these costs on all customers through a nonbypassable rider, and impose its own forecast  
9 of environmental investment costs, to be later trued up with an unspecified rate  
10 mechanism. And, if despite all of its investments in environmental equipment, the  
11 company decides to shutter a generating facility, it now seeks to recover all of the closure  
12 costs from all customers on a nonbypassable basis, through the proposed FCCR. The  
13 PUCO should not authorize AEP Ohio to burden all customers with this risk.

### 14 ***3. Facilities Closure Cost Recovery Rider – FCCR***

15 **Q. PLEASE DESCRIBE THE FCCR.**

16 A. The FCCR is designed to reimburse AEP Ohio for any costs it incurs if it shutters  
17 generating plants during the proposed ESP period. Specifically, AEP Ohio seeks to  
18 recover costs that include, but are not limited to, “materials and supplies unique to the  
19 facility, environmental liabilities requiring action upon facility closure, mitigation costs  
20 required by applicable existing or future environmental regulations, and legacy pension  
21 and benefit requirements. For facilities requiring early closure, costs may also include

undepreciated balances.”<sup>93</sup> Thus, AEP Ohio seeks to recover all closure costs, including any undepreciated balances of plants that are closed prematurely.

**Q. DOES AEP EXPLAIN WHY THESE COSTS SHOULD BE RECOVERED ON A NONBYPASSABLE BASIS?**

A. No. AEP Ohio witness Thomas offers no explanation whatsoever as to why these costs should be recovered from customers who purchase electricity from competitive electric suppliers. AEP Ohio witness Moore simply states, without any explanation or justification, that the rider will be structured as a nonbypassable per kWh rider.<sup>94</sup> Competitive suppliers, of course, themselves face the risk of having to close uneconomic generating plants in the future. Unlike AEP Ohio is attempting, however, these suppliers cannot force customers to pay for these costs when they occur. Structuring this rider as a nonbypassable charge is an anti-competitive action by AEP Ohio to foreclose competition.

**Q. IS AEP OHIO’S PROPOSED FCCR BASED ON KNOWN AND MEASURABLE COSTS ASSOCIATED WITH CLOSING GENERATING FACILITIES?**

A. No. The FCCR fails the basic “known and measurable” test required for any cost-based rate element.<sup>95</sup> AEP Ohio admits it cannot estimate facilities closure costs.<sup>96</sup> Therefore, the costs are not known and measurable, and there is no basis whatsoever for

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<sup>93</sup> Thomas Direct at 24:15-21.

<sup>94</sup> Moore Direct at 13:18.

<sup>95</sup> As explained in Jonathan Lesser and Leonardo Giacchino, *Fundamentals of Energy Regulation* (Vienna, VA: Public Utilities Reports, Inc., 2007) (“Lesser and Giacchino”) at 43 (emphasis in original): “costs must be *known and measurable*. That is, the regulated firm must justify with documentation, facts, and methodology those costs it wishes ratepayers to reimburse. Typically a regulated firm is required to prove that all of the costs it is requesting to recover are legitimate expenditures.”

<sup>96</sup> Thomas Direct at 23:13-15.



1 setting a FCCR rider, much less a nonbypassable one that serves to foreclose  
2 competition.

3 **Q. IS AEP OHIO'S PROPOSED FCCR JUSTIFIED?**

4 A. No. While AEP Ohio pretends this rider is about protecting jobs in Ohio, it is  
5 designed simply to allow AEP Ohio to double-recover generating facility costs. AEP  
6 Ohio already recovers estimated facilities closure costs in its depreciation costs, which  
7 under standard ratemaking principles are designed to recover future negative salvage  
8 costs, that is, the net costs associated with decommissioning capital assets that have  
9 reached the end of their physical or economic lives. Moreover, because the cost of these  
10 plant closures was specifically taken into account when calculating AEP Ohio's stranded  
11 costs in 1999, AEP Ohio cannot now recover these costs through a cost-based rider. That  
12 would amount to double-recovery of costs. In addition, AEP Ohio has not shown why  
13 this rider should be nonbypassable, or even suggested under what statutory provision it  
14 could be nonbypassable. I am not aware of any such provision authorizing this rider on a  
15 nonbypassable basis.

16 **Q. HOW WILL THE FCCR RESULT IN DOUBLE-RECOVERY OF COSTS?**

17 A. Depreciation costs are collected to account for the effects of wear and tear on  
18 capital equipment or to account for equipment that otherwise reaches the end of its  
19 economic lifetime.<sup>97</sup> In the context of rate regulation, the purpose of depreciation is to  
20 provide a firm the opportunity to recover its capital investment based on the useful life of  
21 that investment.

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<sup>97</sup> Lesser and Giacchino at 91.

Annual depreciation rates are calculated by dividing the net undepreciated value of an asset by the average remaining life or average service life, depending on whether an original-life or remaining-life depreciation approach is used. For example, consider the straight-line remaining life approach, which is probably the most common treatment of depreciation costs. Under this standard approach, the annual depreciation rate, D%, is calculated using the following equation:

$$D\% = \frac{100\% - (BR/O) - (NS/O)}{ARL}$$

Where: O = original cost,  
BR = book reserve (the depreciation amount previously accounted for)<sup>98</sup>  
NS = net salvage cost (gross removal cost less salvage value)  
ARL = average remaining life

In other words, the depreciation rate equals the net undepreciated cost, accounting for net salvage costs (*i.e.*, the value of salvaged equipment less the cost of removal), divided by the expected years of remaining life.

What this means is that AEP Ohio's depreciation rates already include an allowance for the eventual closure of its generating facilities. Therefore, imposing an additional nonbypassable facility closure cost rider allows AEP Ohio to effectively double-recover these costs.

The incorporation of facilities closure costs in depreciation rates has previously been recognized by PUCO Staff, specifically in regard to the closure of Sporn Unit 5.<sup>99</sup>

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<sup>98</sup> This is also referred to as "accrued depreciation."

<sup>99</sup> *In The Matter of the Application of Ohio Power Company for Approval of the Shutdown of Unit 5 of the Philip Sporn Generating Station and to Establish a Plant Shutdown Rider*, Case No. 10-1454-EL-RDR, Comments Submitted on Behalf of the Staff of the Public Utilities Commission of Ohio, April 8, 2011, at 4. "According to the depreciation rates established in OPCo's most recent distribution rate, Case No. 94-996-EL-AIR, Sporn Unit 5 should have been fully depreciated in 2010. The depreciation rates established in that case included 17% closure costs, along with an escalator of 3.6% each year to account for increased costs over time." (footnotes omitted).

1 As such, PUCO Staff correctly concluded that AEP Ohio is attempting to double-recover  
2 plant closure costs, which is clearly inconsistent with basic rate regulation.

3 **Q. SHOULD AEP OHIO BE ALLOWED TO RECOVER THE UNDEPRECIATED**  
4 **VALUE OF GENERATING PLANTS THAT ARE CLOSED BEFORE THE END**  
5 **OF THEIR PHYSICAL LIVES?**

6 A. No. One of the reasons AEP Ohio uses an 11.1% allowed return on equity  
7 (“ROE”) in its capacity cost charge estimate is to compensate for business and financial  
8 risk. That risk extends not only to AEP Ohio’s return on capital, but also to its return of  
9 capital. Specifically, AEP Ohio’s allowed ROE is not a guaranteed return. If AEP Ohio  
10 wishes to guarantee a return of all of its capital investment, its ROE should be reduced to  
11 a risk-free rate.

12 However, as I discussed previously, AEP Ohio waived stranded cost recovery as a  
13 result of Ohio’s regulatory shift to market-based generation service.<sup>100</sup> AEP Ohio had  
14 the opportunity between 2001 and 2008 to receive generation transition revenues and  
15 regulatory transition revenues while making the transition to a fully competitive retail  
16 electric generation market. As one example, the cost of decommissioning the Sporn  
17 facility in 2010 was specifically taken into account in Ohio Power’s stranded costs  
18 calculations performed in late 1999.<sup>101</sup> That opportunity has ended, and Ohio law  
19 continues to provide that AEP Ohio “shall be fully on its own in the competitive  
20 market.”<sup>102</sup> Therefore, any additional recovery by AEP Ohio associated with closure of  
21 its generating facilities operating at that time would again amount to either double

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<sup>100</sup> *In the Matter of the Applications of Columbus Southern Power Company and Ohio Power Company for Approval of Their Electric Transition Plans and for Receipt of Transition Revenues*, Case Nos. 99-1729-EL-ETP and 99-1730-EL-ETP (Opinion and Order at 15-16, 18) (September 28, 2000).

<sup>101</sup> ETP Landon Direct at WP-Exhibit No. JHL-2, p. 1 of 13.

<sup>102</sup> R.C. 4928.38.

1 recovery or would equate to recovery of costs that were foregone and are not permitted  
2 by statute. Additional recovery also would be anti-competitive because no owner of  
3 competitive generating facilities would have this same guaranteed cost recovery and  
4 would therefore be at a significant competitive disadvantage.

5 **4. Generation Resource Rider – GRR**

6 **Q. PLEASE DESCRIBE THE GRR.**

7 A. The Generation Resource Rider is a nonbypassable rider designed to collect AEP  
8 Ohio's investments in generating resources, "including renewable capacity that the  
9 Company owns or operates for the benefit of Ohio customers."<sup>103</sup> The rider seeks to  
10 recover not only costs of new generating resources AEP Ohio builds, but also the costs it  
11 incurs to extend the lives of existing generating resources.<sup>104</sup> The first generating project  
12 whose costs AEP Ohio intends to recover through the GRR is the proposed 49.9 MW  
13 Turning Point Solar ("TPS") project, the first phase of which is scheduled to be on-line in  
14 2013.

15 **Q. WHAT IS AEP OHIO'S JUSTIFICATION FOR SELECTING THE TPS**  
16 **PROJECT AS THE FIRST GENERATING RESOURCE TO BE ACQUIRED**  
17 **UNDER THE GRR?**

18 A. According to the Supplemental Direct testimony of AEP Ohio witness Godfrey,  
19 AEP Ohio needs the TPS project because "[t]he increasing renewable energy benchmarks

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<sup>103</sup> Nelson Direct at 21:11-12.

<sup>104</sup> *Id.* at 22:3-5.

1 set forth in S.B. 221 require that additional solar resources must be secured in the coming  
2 years in order for the Company to comply.”<sup>105</sup>

3 **Q. R.C. 4928.64(E) STATES THAT “ALL COSTS INCURRED BY AN ELECTRIC**  
4 **DISTRIBUTION UTILITY IN COMPLYING WITH THE REQUIREMENTS OF**  
5 **THIS SECTION SHALL BE BYPASSABLE BY ANY CONSUMER THAT HAS**  
6 **EXERCISED CHOICE OF SUPPLIER UNDER SECTION 4928.03 OF THE**  
7 **REVISED CODE.” ARE THE COSTS OF THE TPS PROJECT BYPASSABLE**  
8 **BY SHOPPING CUSTOMERS?**

9 A. No. AEP Ohio is incurring the costs of the TPS project in order to comply with  
10 the renewable benchmarks in R.C. 4928.64,<sup>106</sup> yet it wants to recover those costs from  
11 customers that have exercised choice of supplier. The plain language of this section is  
12 quite clear: renewable energy investments such as the TPS project cannot be funded with  
13 nonbypassable charges, contrary to AEP Ohio’s proposed GRR.

14 **Q. IF AEP USES THE GRR TO FUND CONVENTIONAL GENERATING**  
15 **RESOURCES, AND NOT JUST ALTERNATIVE ENERGY RESOURCES LIKE**  
16 **THE TPS PROJECT, IS THE PROPOSED GRR JUSTIFIED AS A**  
17 **NONBYPASSABLE RIDER?**

18 A. No. A nonbypassable GRR will foreclose market competition. AEP Ohio  
19 provides no evidence that customers who take competitive electric service should be  
20 forced to pay for AEP Ohio’s development of any generating resources, much less the  
21 TPS project.

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<sup>105</sup> Supplement Direct Testimony of Jay. F. Godfrey on behalf of Columbus Southern Power Company and Ohio Power Company, July 1, 2011 (“Godfrey Supplemental”) at 18:8-10.

<sup>106</sup> Direct Testimony of Jay F. Godfrey on behalf of Columbus Southern Power Company and Ohio Power Company, Jan. 27, 2011 (“Godfrey Direct”) at 24:16-18.

1 **Q. WHY WILL A NONBYPASSABLE GRR FORECLOSE MARKET**  
2 **COMPETITION?**

3 A. First, regarding the renewable energy resource benchmarks set forth in R.C.  
4 4928.64(B)(2), competitive electric suppliers are required to meet those same  
5 benchmarks. Thus, the proposed GRR will impose the renewable energy costs on  
6 customers who wish to purchase electricity from a competitive supplier twice – paying  
7 for AEP Ohio’s renewable costs and paying again for whichever competitive electric  
8 supplier they choose. Second, while AEP Ohio touts the job creation benefits of this  
9 nonbypassable rider, development of high-cost, above-market generating facilities will  
10 impose long-term economic harm on the state. Businesses forced to pay for uneconomic  
11 generation investments will be that much less competitive, and will have greater  
12 incentive to leave the state for locations offering a more competitive economic  
13 environment.

1 **Q. AEP OHIO STATES THAT A NONBYPASSABLE GRR IS CONSISTENT WITH**  
2 **R.C. 4928.143(B)(2)(C).<sup>107</sup> DO YOU AGREE?**

3 A. No. AEP Ohio has not satisfied the requirements of that section that are  
4 necessary in order to obtain approval of a nonbypassable surcharge.

5 **Q. HAS AEP OHIO SHOWN THAT THE TPS PROJECT WAS SOURCED**  
6 **THROUGH A COMPETITIVE BID PROCESS?**

7 A. There is no evidence AEP Ohio sourced the TPS project using a competitive bid process  
8 so as to obtain the least-cost source of generation. In its response to IEU-Ohio's INT-007  
9 (attached as Exhibit JAL-16), AEP Ohio admitted that the agreement with Turning Point  
10 was not sourced through a competitive bid process. Instead, AEP Ohio unilaterally  
11 entered into "highly confidential negotiations" with the project developers.<sup>108</sup> According  
12 to AEP Ohio witness Godfrey, AEP Ohio is also in bilateral negotiations with the  
13 proposed supplier of photovoltaic modules, Isofoton, S.A., based in Spain.<sup>109</sup> Thus, it

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<sup>107</sup> Section 4928.143(B)(2)(c) states, in part, that an ESP may include (with emphasis added):

The establishment of a nonbypassable surcharge for the life of an electric generating facility that is owned or operated by the electric distribution utility, was sourced through a competitive bid process subject to any such rules as the commission adopts under division (B)(2)(b) of this section, and is newly used and useful on or after January 1, 2009, which surcharge shall cover all costs of the utility specified in the application, excluding costs recovered through a surcharge under division (B)(2)(b) of this section. However, no surcharge shall be authorized unless the commission first determines in the proceeding that there is need for the facility based on resource planning projections submitted by the electric distribution utility. Additionally, if a surcharge is authorized for a facility pursuant to plan approval under division (C) of this section and as a condition of the continuation of the surcharge, the electric distribution utility shall dedicate to Ohio consumers the capacity and energy and the rate associated with the cost of that facility.

<sup>108</sup> Application, p. 11.

<sup>109</sup> Godfrey Supplemental at 16:3-4.

1 does not satisfy at least one of the statutory requirements for a nonbypassable rider in RC  
2 4928.143(B)(2)(b).

3 AEP Ohio appears to be attempting to satisfy the “sourced through a competitive  
4 bid process” requirement by utilizing competitive bidding to procure goods and services  
5 for the project, not including the solar modules and inverters, which are the largest cost  
6 components of the project.<sup>110</sup> However, this requirement obviously is intended to ensure  
7 that customers pay only for the lowest-cost facility that satisfies the demonstrated need.  
8 AEP Ohio has not shown – indeed, will never be able to show – that the Turning Point  
9 project is the lowest cost project to procure 49.9 MW of generation (or, as discussed  
10 below, that retail customers need AEP Ohio to construct a 49.9 MW facility).

11 **Q. ARE THERE ANY OTHER REASONS WHY YOU OPPOSE THE PROPOSED**  
12 **NONBYPASSABLE GRR, INCLUDING DEVELOPMENT OF THE TPS**  
13 **PROJECT?**

14 A. Yes. I oppose the GRR for several additional reasons. First, despite AEP Ohio’s  
15 statements that it must build the TPS project to meet the “need” for renewable generation,  
16 AEP Ohio’s definition of “need” is not how “need” is defined in the plain language of  
17 R.C. 4928.143(B)(2)(c). Second, Mr. Hamrock’s testimony that new generation will not  
18 be built in Ohio unless AEP Ohio is guaranteed cost-recovery through a nonbypassable  
19 charge is self-serving and completely unsupported.<sup>111</sup> Third, as I discuss in more detail  
20 in Section IV of my testimony, forcing businesses and customers to subsidize  
21 uneconomic generation in order to create jobs – permanent or otherwise – not only robs

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<sup>110</sup> Godfrey Testimony, Exhibit JFG-5 at p. 7.

<sup>111</sup> See FES witness Banks’ Direct Testimony for a description of market-based generation development that does not depend upon nonbypassable charges collected by EDUs.



1 Peter to pay Paul, but will result in a net loss of jobs in the state because of higher electric  
2 prices.

3 **Q. HAS AEP OHIO SHOWN THERE IS A NEED FOR THE TPS PROJECT?**

4 A. No. According to the Supplement to the 2010 Long-Term Forecast Report (“2010  
5 LTFR”) submitted in Case Nos. 10-501-EL-FOR and 10-502-EL-FOR,<sup>112</sup> AEP Ohio is  
6 not developing the TPS Project to meet its overall need for generation, in contrast to the  
7 plain language of R.C. 4928.143(B)(2)(c). In fact, the 2010 LTFR makes clear that AEP  
8 Ohio has no need for any new generation. Rather, AEP Ohio is attempting to portray  
9 meeting its solar energy requirement under R.C. 4928.64(B) as identical to a “need” for  
10 new generating capacity under R.C. 4928.143(B)(2)(c), which is inappropriate.

11 **Q. HAS AEP OHIO SHOWN THAT THERE IS A NEED FOR THE TPS FACILITY**  
12 **BASED ON RESOURCE PLANNING PROJECTIONS SUBMITTED BY THE**  
13 **ELECTRIC DISTRIBUTION UTILITY?**

14 A. No. “Need” is based on ensuring there is sufficient generation supply provided  
15 through the regional energy markets to meet forecast electric demand and, further, that an  
16 EDU’s customers must pay for a new generating plant through a nonbypassable rider  
17 because the energy markets will not satisfy that need.

18 AEP Ohio seeks to turn the concept of “need” on its head. First, AEP Ohio has  
19 not demonstrated that the 49.9 MW TPS Project is “needed” in a resource planning sense.  
20 Rather, AEP Ohio states that it prefers TPS to meet Ohio’s solar energy requirement.  
21 Second, even if the 49.9 MW of capacity is “needed” to meet the forecast demand for  
22 electricity, the plant’s projected capacity factor, which CONFIDENTIAL EXHIBIT PJN-  
23 4 shows to be [redacted], plus its projected levelized cost of \$257/MWh, makes it one of

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<sup>112</sup> See December 20, 2010 Supplement, Supplemental Appendix 1, Exhibit 5.

1 the most costly possible generating resource alternatives. In other words, the projected  
2 average cost of the TPS Project is far higher than the prevailing market price for power.  
3 The Turning Point facility is obviously not a “least-cost” generating resource and, thus,  
4 not needed by Ohio consumers. And, “dedicating” the project’s [redacted] output (which  
5 according to CONFIDENTIAL EXHIBIT PJN-4 will never be above [redacted]MWh,  
6 based on the project’s anticipated capacity factor) would increase the cost of electricity  
7 paid by Ohio consumers, contrary to the statute’s clear intent.<sup>113</sup>

8 **Q. HAS AEP OHIO PREPARED ESTIMATES OF THE TPS PROJECT’S**  
9 **LEVELIZED COST?**

10 A. Yes. AEP Ohio witness Nelson testifies that the project’s levelized cost will be  
11 \$257/MWh.<sup>114</sup> However, as I discuss below, that cost assumes the project is granted a  
12 30% investment tax credit, accelerated depreciation, low interest financing from the U.S.  
13 Rural Utility Service (“RUS”) and the Ohio Air Quality Development Authority  
14 (“OAQDA”), and state property tax abatement. Thus, in addition to the significant  
15 subsidies the TPS Project is supposed to receive from federal and state taxpayers, AEP  
16 Ohio proposes that the entire cost of the project be guaranteed by its customers.

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<sup>113</sup> Notably, when AEP Ohio was asked whether it would dedicate to Ohio consumers the capacity and energy and the rate associated with the cost of the facility, it responded that it would dedicate only the energy and capacity, not the rate associated with the cost of the facility. See Columbus Southern Power Company’s and Ohio Power Company’s Response to IEU-Ohio’s 2nd set INT-057 (attached as Exhibit JAL-17)

<sup>114</sup> Supplemental Direct Testimony of Philip J. Nelson on Behalf of Columbus Southern Power Company and Ohio Power Company, July 1, 2011 (“Nelson Supplemental”) at 7:12.

1 **Q. HOW DOES THAT LEVELIZED COST COMPARE WITH THE MARKET**  
2 **COST OF POWER?**

3 A. As an example, the average market price of power in PJM for the 2012-2014 time  
4 frame based on forward contracts was \$39.92/MWh on January 27, 2011.<sup>115</sup>

5 **Q. WHAT IS THE ESTIMATED CONSTRUCTION COST OF THE TPS PROJECT?**

6 A. According to AEP Ohio witness Nelson, the construction cost of the project is  
7 estimated to be just over \$216 million, or \$4,334/kW.<sup>116</sup> By comparison, a 2008 report  
8 by the Congressional Research Service estimated the installed cost of a new gas-fired  
9 combined-cycle plant to be less than \$1,200/kW, about one-fourth the cost of the TPS  
10 facility.<sup>117</sup>

11 **Q. DOES AEP OHIO PROVIDE ANY EVIDENCE THAT THE TPS PROJECT IS A**  
12 **PRUDENT INVESTMENT?**

13 A. No. Mr. Godfrey admits that, "It is too early in the due diligence and negotiation  
14 process to opine as to the prudence of this proposed project."<sup>118</sup> As AEP, Inc.'s  
15 Chairman and CEO, Michael Morris, recently stated: "The whole notion of getting the  
16 price of electricity high enough to compensate for the renewables is a folly, and it will  
17 ultimately prove itself to be that."<sup>119</sup>

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<sup>115</sup> AEP Dayton Hub futures settled 1/27/2011 (the date of AEP Ohio's filing), and including a \$0.58 per MWh basis adder to the AEP Zone. *See* Schnitzer Direct at p. 44.

<sup>116</sup> Nelson Supplemental, Exhibit PJN-4 at p. 7.

<sup>117</sup> S. Kaplan, "Power Plant Characteristics and Costs," CRS Report for Congress, November 13, 2008, at 53, Table 13. Available at: <http://www.fas.org/sgp/crs/misc/RL34746.pdf>.

<sup>118</sup> Godfrey Direct at 29:22-23.

<sup>119</sup> Transcript of "Fireside Chat" between Hugh Wynne and Michael Morris at Sanford C. Bernstein & Co., LLC, Strategic Decisions Conference, June 1, 2011, at pp. 45-46, attached as Exhibit JAL-18.

1   **Q.    HAS AEP OHIO DETERMINED HOW THE PROJECT WILL BE FINANCED?**

2    A.           To some extent, yes. According to Mr. Nelson, the financing will include \$20  
3           million in equity from AEP Ohio, an additional loan from AEP Ohio, a loan from the  
4           OAQDA, third party equity from an as-yet unknown party, and debt financing from the  
5           RUS. The proposed sources of funds and capital structure are set forth in the  
6           COMPETITIVELY SENSITIVE - CONFIDENTIAL version of Exhibit PJN-4.

7   **Q.    IS ALL OF THIS FINANCING IN PLACE?**

8    A.           No. First, Mr. Godfrey states that AEP Ohio will not seek any third-party equity  
9           financing until the PUCO grants AEP Ohio a nonbypassable charge for the life of the  
10          TPS project.<sup>120</sup> Second, Mr. Godfrey states that AEP Ohio has not yet completed the  
11          process needed to qualify for the RUS' FFB Guaranteed Loan Program.<sup>121</sup>

12   **Q.    WHAT IS YOUR RESPONSE TO MR. HAMROCK'S STATEMENT THAT NEW**  
13   **GENERATION WILL NOT BE CONSTRUCTED IN OHIO UNLESS AEP OHIO**  
14   **IS GUARANTEED COST RECOVERY FROM NONBYPASSABLE CHARGES?**

15   A.           Mr. Hamrock is advocating a regulatory framework that is specifically designed  
16          to foreclose competition and make independent development of generating resources by  
17          competitive electric suppliers and other developers far more difficult, while ensuring that  
18          AEP Ohio can build new generation with a guarantee of full cost recovery. If the PUCO  
19          adopts his argument, it is likely to result in uneconomic resources being built and in retail  
20          customers paying higher prices than they otherwise would and would thus be contrary to  
21          state policy.

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<sup>120</sup> Godfrey Supplemental at 12:1-2.

<sup>121</sup> *Id.* at 12:6-13:1.

1           The PUCO should, instead, rely on market price signals to stimulate investment in  
2           generating facilities. Notably, the PUCO has not required in the past that a portion of  
3           AEP Ohio's off-system sales be used as an offset to retail rates.<sup>122</sup> Because several other  
4           states require that AEP Ohio's affiliates do this,<sup>123</sup> AEP Ohio has a strong incentive to  
5           build new generating facilities in Ohio so that it obtains 100% of the benefits of off-  
6           system sales. In fact, CSP and OPC have the highest gross margins of AEP's utilities,  
7           and these two utilities made up 33% of all AEP retail revenues in 2009 and 41% of  
8           contributions to earnings in 2010.<sup>124</sup>

9   **Q.   MR. HAMROCK ALSO STATES THAT THE "BYPASSABILITY OF**  
10 **RENEWABLE COMPLIANCE STANDARDS THROUGH CUSTOMER**  
11 **SHOPPING"<sup>125</sup> IS A RISK OF CUSTOMERS TAKING POWER FROM**  
12 **COMPETITIVE ELECTRIC SUPPLIERS. DO YOU AGREE?**

13   **A.**No. Mr. Hamrock's statement is disingenuous, as it misrepresents the wide-  
14           spread responsibility for meeting state renewable energy standards. The responsibility of  
15           meeting those standards goes with the customer. Thus, the more AEP Ohio customers  
16           rely on competitive electric suppliers, the greater will be those suppliers' renewable  
17           obligations and the less will be AEP Ohio's. Mr. Hamrock provides no rational  
18           economic arguments as to why, if competitive energy suppliers must meet the same

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<sup>122</sup> See *In the Matter of the Application of Columbus Southern Power Company for Approval of an Electric Security Plan; an Amendment to Its Corporate Separation Plan; and the Sale or Transfer Certain Generating Assets; In the Matter of the Application of Ohio Power Company for Approval of Its Electric Security Plan; and an Amendment to Its Corporate Separation Plan*, Case Nos. 08-917-EL-SSO and 08-918-EL-SSO, Opinion and Order at pp. 17, 69 (Mar. 18, 2009).

<sup>123</sup> See AEP 2010 Fact Book, p. 67.

<sup>124</sup> AEP 2010 Fact Book, at p. 9 (showing Ohio is by far the largest contributor to retail revenues of eleven states in AEP system); AEP Handout to the Boston Investor Meetings, Boston, MA, July 7, 2011, at p. 8, attached as Exhibit JAL-19, available at <http://www.aep.com/investors/present/documents/BostonInvestorMeetings7-7-2011.pdf>.

<sup>125</sup> Hamrock Direct at 30:20-22.

1 renewable standards as AEP Ohio, they should do so without resorting to nonbypassable  
2 charges and guarantees of cost recovery, whereas AEP Ohio should be allowed to impose  
3 such nonbypassable charges. Moreover, as I previously discussed, nonbypassable cost  
4 recovery of renewable energy resources is directly contrary to R.C. 4928.64(E), which  
5 provides that all renewable compliance costs incurred by an electric distribution utility  
6 “shall be bypassable by any consumer that has exercised choice of supplier . . . .”

7 ***5. Market Transition Rider – MTR***

8 **Q. IS THE PROPOSED MTR JUSTIFIED AS A NONBYPASSABLE RIDER?**

9 A. No. AEP Ohio states that the MTR is intended to “rebalance” its current  
10 generation rates and, thus, relates exclusively to the generation rates paid by non-  
11 shopping customers.<sup>126</sup> There is no reasonable basis for shopping customers, who by  
12 definition do not take generation service from AEP Ohio, to receive credits or charges  
13 related to the rebalancing of SSO generation rates. I am not aware of any statutory basis  
14 for making the MTR nonbypassable.

15 ***6. Generation NERC Compliance Cost Recovery Rider – NERCR***

16 **Q. PLEASE DESCRIBE THE NERCR.**

17 A. The NERCR is designed to recover AEP Ohio’s generation-related expenses  
18 incurred to meet NERC reliability standards. AEP Ohio is proposing to make this rider  
19 nonbypassable. It offers no justification or authority for collecting these generation-  
20 related costs through a nonbypassable rider.

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<sup>126</sup> Roush Direct at 11:10-23.

1   **Q.     DOES AEP ESTIMATE THE COST OF THIS RIDER?**

2   A.           No. The costs are not known and measurable at this time. AEP Ohio witness  
3           Thomas merely states that, “There are numerous activities under NERC’s purview that  
4           continue to create additional requirements for the Company.”<sup>127</sup> AEP Ohio has not  
5           specifically identified the types of costs it seeks to recover or the estimated amounts of  
6           costs which are related to NERC. <sup>128</sup> Furthermore, because AEP Ohio has not identified  
7           the specific costs that it intends to recover, there is no way to identify the costs which are  
8           legitimately related to NERC requirements and which are not. AEP Ohio should not be  
9           allowed to collect for these costs, even on a bypassable basis, if it cannot estimate what  
10          the costs will be.

11   **Q.     IS AEP’S PROPOSED NONBYPASSABLE NERC-RELATED GENERATING**  
12   **COST RIDER JUSTIFIED?**

13   A.           No. This rider is designed to recover generation-related costs to meet compliance  
14           requirements imposed by NERC. To the extent this rider is strictly related to generation,  
15           as AEP Ohio states, it provides no benefit to customers who purchase electricity from  
16           competitive retail suppliers. Because there is no benefit to shopping customers, it is  
17           inappropriate for this rider to be nonbypassable.

18                Allowing AEP Ohio guaranteed recovery of these costs from all customers,  
19           including customers who wish to purchase electricity from competitive electric suppliers,  
20           is clearly anti-competitive. All generation suppliers that own generating facilities will be  
21           subject to the same NERC requirements and will be forced to incur similar compliance

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<sup>127</sup> Thomas Direct at 26:12-13.

<sup>128</sup> See AEP Ohio responses to IEU-Ohio INT-22, INT-23, INT-24, and INT-100 (attached as Exhibit JAL-20).

1 costs. Although AEP Ohio once again wraps itself in the jobs flag to justify the  
2 nonbypassability of the NERCR, it is one more attempt by AEP Ohio to increase its  
3 revenue stream and foreclose competition.

4 **7. Provider of Last Resort Charge – POLR**

5 **Q. PLEASE DESCRIBE THE PROPOSED POLR CHARGE.**

6 A. AEP Ohio is obligated to provide service to all customers who purchase  
7 electricity from CRES providers and who wish to return to AEP Ohio service under its  
8 SSO terms. This is referred to as AEP Ohio's POLR obligation. AEP Ohio proposes that  
9 its POLR rider be paid by all distribution customers and thus be nonbypassable.

10 **Q. DOES AEP OHIO ALSO INCLUDE AS PART OF ITS POLR-RELATED COSTS**  
11 **THE COSTS IT INCURS WHEN CUSTOMERS SWITCH FROM TAKING**  
12 **GENERATION SERVICE FROM AEP OHIO TO CRES SUPPLIERS?**

13 A. Yes. As AEP Ohio witness Ms. Thomas states, "The Company incurs a POLR  
14 obligation because all customers are free to switch to receive generation service from a  
15 CRES provider, either on an individual basis or as part of governmental aggregation."<sup>129</sup>

16 **Q. DO YOU AGREE THAT AEP OHIO INCURS A POLR OBLIGATION WHEN**  
17 **CUSTOMERS LEAVE AEP OHIO SERVICE TO TAKE SERVICE FROM A**  
18 **CRES PROVIDER?**

19 A. No. Allowing AEP Ohio to recover costs associated with customers leaving AEP  
20 Ohio service and taking service from CRES providers is inconsistent with state policy  
21 that encourages market competition and would allow AEP Ohio to double-recover  
22 stranded costs, which it is not allowed to do.

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<sup>129</sup> Thomas Direct at 13:18-20.



1 **Q. WHY IS ALLOWING AEP OHIO TO RECOVER COSTS ASSOCIATED WITH**  
2 **CUSTOMERS LEAVING AEP OHIO AND PURCHASING ELECTRICITY**  
3 **FROM CRES PROVIDERS CONTRARY TO OHIO STATE POLICY?**

4 A. R.C. 4928.02(H) states, in its entirety, that it is the policy of the State of  
5 Ohio to

6 Ensure effective competition in the provision of retail electric service by  
7 avoiding anticompetitive subsidies flowing from a noncompetitive retail  
8 electric service to a competitive retail electric service or to a product or  
9 service other than retail electric service, and vice versa, including by  
10 prohibiting the recovery of any generation-related costs through  
11 distribution or transmission rates.

12 Charging customers for the right to leave AEP Ohio's service is contrary to the goal of  
13 ensuring effective competition. In fact, if one applies Ms. Thomas's logic, then  
14 residential customers who switch from electric water heat to gas water heat, or  
15 commercial building owners who switch from electric chillers to gas-fired chillers to  
16 provide air conditioning, or industrial customers who decide to install cogeneration  
17 facilities, and so forth, should also reimburse AEP Ohio.

18 **Q. WHY WOULD ALLOWING AEP OHIO TO CHARGE FOR POLR-RELATED**  
19 **COSTS ASSOCIATED WITH CUSTOMERS LEAVING AEP OHIO SERVICE**  
20 **ALLOW IT TO DOUBLE-RECOVER COSTS?**

21 A. As I previously discussed on pages 19-27, AEP Ohio was compensated for its  
22 stranded generation costs as part of the transition to competition. Thus, it cannot claim  
23 recovery of costs that result if customers leave AEP Ohio to take service from CRES  
24 providers who offer lower prices or simply different products those customers prefer,  
25 such as "green" power. Allowing AEP Ohio to recover "lost revenues" that it would  
26 otherwise receive *but for* lower market prices that result from competition, after AEP

1 Ohio was already compensated for stranded costs as part of the transition to competition,  
2 would allow it to double-recover those costs.

3 **Q. HOW MUST A POLR CHARGE BE DETERMINED SO AS TO COMPENSATE**  
4 **AEP OHIO FOR POLR-RELATED COSTS INCURRED BECAUSE**  
5 **CUSTOMERS CAN RETURN TO SSO SERVICE?**

6 A. AEP Ohio has proposed that the POLR Charge be designed to provide for  
7 recovery of its costs to provide POLR service. Thus, AEP Ohio's POLR-related costs,  
8 which it proposes as cost-based, must be known and measurable, and just and reasonable.  
9 Such a requirement is a basic and fundamental component to traditional cost-of-service  
10 ratemaking.<sup>130</sup>

11 **Q. HOW CAN A POLR RIDER BE BASED ON KNOWN AND MEASURABLE**  
12 **COSTS IF IT IS DESIGNED TO COMPENSATE AEP OHIO FOR THE COSTS**  
13 **ASSOCIATED WITH CUSTOMERS RETURNING TO SSO SERVICE IN THE**  
14 **FUTURE?**

15 A. A POLR rider can reflect the known and measurable costs associated with an  
16 insurance policy. Just as utilities insure equipment against potential damages, or can  
17 insure against forced outages at their generating facilities, or even against hurricanes,  
18 AEP Ohio can either purchase insurance to cover its POLR risk or self-insure against that  
19 risk.

20 **Q. HOW COULD AEP OHIO PURCHASE INSURANCE FOR ITS POLR RISK?**

21 A. One common approach, as stated by AEP Ohio witness LaCasse, is to auction off  
22 that risk. Dr. LaCasse states that, "A common method used by EDUs without generation  
23 assets to manage the costs and risks associated with POLR obligations is to transfer these  
24 risks to procure supply for their SSO customers using a competitive bidding process for

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<sup>130</sup> Lesser and Giacchino at 43-44.

1 full-requirements contracts. Under such contracts, winning bidders agree to bear the  
2 various POLR risks including shopping-related risk.”<sup>131</sup>

3 **Q. HOW COULD AEP OHIO SELF-INSURE AGAINST POLR RISK?**

4 A. The most straightforward way would be for AEP Ohio to purchase a “laddered”  
5 set of futures contracts that would provide additional generation for the company in the  
6 event that customers return to SSO service.

7 To determine the number of futures contracts to purchase, AEP Ohio would first  
8 need to identify and quantify the POLR risk; that is, it would need to determine the  
9 likelihood that a customer taking service from a CRES provider would return to SSO  
10 service if market prices increased such that they were expected to remain above SSO  
11 prices for the duration of the ESP. AEP Ohio could also estimate the likelihood that a  
12 CRES provider would default on its obligations.<sup>132</sup>

13 Having identified and quantified its POLR risk, AEP Ohio could then determine  
14 what it would cost to insure itself against that risk by purchasing the appropriate futures  
15 option contracts.

16 **Q. ARE THERE OTHER WAYS THAT COMPANIES CAN SELF-INSURE**  
17 **AGAINST RISK?**

18 A. Yes. For example, in self-insuring against the risks from hurricane damages,  
19 some utilities will establish a “hurricane reserve,” either in the form of a cash account or  
20 a portion of retained earnings.

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<sup>131</sup> LaCasse Direct at 7:22-8:2.

<sup>132</sup> As explained below, AEP Ohio’s use of the Black model does none of this.

1   **Q.     DOES AEP OHIO STATE THAT IT SELF-INSURES AGAINST POLR COSTS?**

2   A.           Yes. According to Ms. Thomas, AEP Ohio “effectively self-insures” against  
3           POLR risk. She recently explained that AEP Ohio simply “absorbs” the costs associated  
4           with customers returning to SSO service by not taking any action to insure or hedge  
5           against POLR risk: “the company can choose to or effectively self-insure it in which case  
6           you would not see a specific cost on the books in terms of an out-of-pocket. It doesn't  
7           mean that it isn't a cost that is borne by the company. . . . Because the company did not  
8           enter into specific actions to lay that risk off on another party, it did itself insure it.”<sup>133</sup>  
9           In other words, Ms. Thomas believes that “self-insurance” means taking no action and  
10          failing to specifically set aside any funds to address its POLR risk.

11   **Q.     DO YOU CONSIDER THAT TO BE “SELF-INSURANCE?”**

12   A.           No. There’s a stark difference between self-insuring and not insuring. What Ms.  
13          Thomas describes is not insuring, which may make economic sense to AEP Ohio to the  
14          extent that it believes the costs to it of shopping customers returning to SSO service is  
15          immaterial. If AEP Ohio elects not to insure against POLR risk, it is possible that it  
16          would never incur costs related to its POLR obligation.

17                Because AEP Ohio is a regulated electric utility, it is required to follow certain  
18          accounting guidelines. These guidelines are designed to assist regulators in establishing  
19          just and reasonable rates. To assert, as Ms. Thomas does, that, even though AEP Ohio  
20          has no specific out-of-pocket costs on its books, the company is self-insured, is wrong.

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<sup>133</sup> *In the Matter of the Application of Columbus Southern Power Company for Approval of an Electric Security Plan and Amendment to Its Corporate Separation Plan; and the Sale or Transfer Certain Generating Assets; In the Matter of the Application of Ohio Power Company for Approval of Its Electric Security Plan; and an Amendment to Its Corporate Separation Plan, Case Nos. 08-917-EL-SSO and 08-918-EL-SSO, Hearing Tr. 07/19/2011 at 239:7-20.*

1 Ms. Thomas is arguing that distribution ratepayers should compensate the company for  
2 POLR costs that are not accounted for anywhere. That is unreasonable and inconsistent  
3 with basic cost-of-service regulation or justifying a cost-based rate.

4 **Q. HOW DOES AEP OHIO PROPOSE TO ESTABLISH THE COST OF ITS POLR**  
5 **OBLIGATION?**

6 A. AEP Ohio proposes to set its POLR charges based on what it terms the “option  
7 value” to AEP Ohio customers for the right, but not the obligation, to return to SSO  
8 service.

9 AEP Ohio calculates a POLR charge of \$2.84/MWh, but explains that this is only  
10 an estimate that will increase the closer the ESP price is to the estimated Competitive  
11 Benchmark Price.<sup>134</sup> Using the \$2.84/MWh rate, the POLR charge is designed to collect  
12 approximately \$322 million over the term of the ESP.<sup>135</sup> AEP Ohio developed the  
13 proposed POLR charge using the “same basic model” as it used in its first ESP  
14 proceeding,<sup>136</sup> which remains under challenge in that proceeding.

15 To estimate the “option value” to customers, AEP Ohio uses what is called the  
16 “Black” model, named after economist Fisher Black. The Black model is a variant of the  
17 more well-known “Black-Scholes” option pricing model, and is used to price so-called  
18 “European” futures options. AEP Ohio also includes what it terms “first-leave” POLR-  
19 related costs, which it estimates as the option value associated with customers having the  
20 opportunity to leave AEP Ohio SSO service and take service from competitive electric  
21 service providers.

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<sup>134</sup> Thomas Direct at 22:11-21.

<sup>135</sup> Thomas Direct, Workpapers, at pp. 8-9.

<sup>136</sup> Thomas Direct, at 18:5.

1 To bolster its arguments in this case, AEP Ohio filed supplemental testimony on  
2 July 1, 2011, by Laura Thomas,<sup>137</sup> Dr. Chantale LaCasse,<sup>138</sup> and Dr. Anil Makhija,<sup>139</sup> I  
3 rebut these witnesses' conclusions below.

4 As I discuss in more detail on the following pages, my conclusions regarding AEP  
5 Ohio's equating its POLR-related costs to the option values of consumers, and its use of  
6 the Black model to estimate these option values are as follows:

7 **AEP Ohio's Cost To Provide POLR Service Is Not Equal To Its Customers' Option**  
8 **Value.**

9 (1) AEP Ohio insists that its POLR-related costs precisely equal the option value to  
10 SSO customers. AEP Ohio is fundamentally wrong. AEP Ohio not only includes  
11 the option value of SSO customers returning to SSO service as its POLR  
12 obligation cost, it also includes the option value of SSO customers leaving AEP  
13 Ohio to take service with CRES providers. Fundamentally, POLR costs do not  
14 include costs to AEP Ohio stemming from SSO customers deciding to purchase  
15 from CRES providers.

16 (2) The cost to AEP Ohio of providing POLR service is not equal to the overall  
17 option value its customers have for having to return to SSO service. AEP Ohio's  
18 costs stem from standing ready to serve customers who return to SSO service.  
19 The cost of doing so will include either costs related to a competitive procurement

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<sup>137</sup> Supplemental Direct Testimony of Laura Thomas on Behalf of Columbus Southern Power Company and Ohio Power Company, Case Nos. 11-346-EL-SSO and 11-348-EL-SSO, July 1, 2011 ("Thomas Supplemental").

<sup>138</sup> Direct Testimony of Chantale LaCasse on Behalf of Columbus Southern Power Company and Ohio Power Company, Case Nos. 11-346-EL-SSO and 11-348-EL-SSO, July 1, 2011 ("LaCasse Direct").

<sup>139</sup> Direct Testimony of Anil Makhija on Behalf of Columbus Southern Power Company and Ohio Power Company, Case Nos. 11-346-EL-SSO and 11-348-EL-SSO, July 1, 2011 ("Makhija Direct").

1 that auctions off AEP Ohio's POLR risk to competitive suppliers, who would then  
2 provide the electric energy needs of customers returning to SSO service, or some  
3 other form of energy hedge purchased directly by AEP Ohio. However, AEP  
4 Ohio has presented no evidence of the cost of any hedging activity, nor any  
5 evidence that it has used standard utility accounting procedures to recognize its  
6 POLR risk and establish a charge for self-insurance.

7 **The Black Model Is Not Appropriate To Estimate SSO Customers' Option Values.**

8 (3) Even if, *arguendo*, AEP Ohio's cost to provide POLR service did equal its  
9 distribution customer's overall option value, the Black model used by AEP Ohio  
10 is not appropriate to estimate that option value, because key assumptions that  
11 underlie that model's use in the context of valuing futures options do not apply.  
12 Specifically, the Black model makes the following assumptions that, as I discuss  
13 below, are not met in this case: (a) markets are perfect and customers will  
14 immediately act in their economic best interest; (b) price volatility is constant and  
15 is reflected by the PJM wholesale market price, even though consumers pay a  
16 retail price; (c) the strike price, *i.e.*, AEP Ohio's ESP price, is constant; (d) returns  
17 are lognormally distributed; and (e) the option to be priced is a European option.

18 (4) AEP Ohio's claims regarding the Black model are overstated. Specifically, the  
19 Black model is not an appropriate method to calculate: (a) the cost of the risk to  
20 AEP Ohio of serving as a POLR provider; (b) the "value" received by AEP's  
21 customers; or (c) the simultaneous value of a "put" and "call" option.

22 **AEP Has Used Incorrect Volatility Input Values in the Black Model.**

(5) Even if, *arguendo*, one determined that the Black model could be used to value SSO customers' option values to return, AEP Ohio uses inappropriate volatility values in the option pricing model that render the estimates derived from its use of the Black model incorrect and excessive.

**AEP Has Not Identified Any Actual POLR-Related Costs, Including Any Costs Associated with “Self-Insuring” Against POLR Risk.**

(6) AEP Ohio has not identified, let alone substantiated, any actual POLR-related costs, including any self-insurance costs. Therefore, AEP Ohio should not be authorized to impose this cost-based POLR charge on its distribution customers.

**Q. HOW DOES AEP OHIO DESCRIBE THE COSTS IT INCURS AS A POLR PROVIDER?**

A. AEP Ohio says that its POLR cost is “subdivided into the following two cost components:

- a. The First-Leave Cost Component – this is the cost of the customers' right to continue to take service at the Company's SSO generation rate until it is in their economic interest to switch to a CRES provider. This component accounts for 88% of the Company's POLR cost as calculated by the constrained option pricing model.
- b. Additional Cost Beyond The First-Leave Component – this is the value of the customers rights, after the First-Leave scenario, which gives them the right to return to the Company's SSO generation rate, and to continue moving between the Company and a CRES provider, limited only per the currently established



switching rules. This component accounts for 12% of the Company's POLR cost as calculated by the constrained option pricing model.”<sup>140</sup>

**Q. IN AN APRIL 19, 2011 DECISION, DID THE OHIO SUPREME COURT DESCRIBE THE SCOPE OF AEP'S POLR RISK?**

A. Yes. The Ohio Supreme Court defined POLR risk as the obligation “to stand ready to accept **returning customers**.”<sup>141</sup> The Ohio Supreme Court has consistently described POLR charges as compensating utilities for standing ready to serve “customers who shop **and then return**.”<sup>142</sup>

*a. The Black-Scholes and Black Option Models Explained*

**Q. CAN YOU DESCRIBE THE “BLACK” MODEL IN SIMPLE TERMS?**

A. Yes. The genesis of the Black model, and the better known Black-Scholes model that preceded it, was a straightforward question: how does one value a stock option? This model can also be used to value commodity spot options, including electricity, that are widely traded in liquid markets.

To understand the Black model, let me begin by describing the Black-Scholes model on which it is based. The Black-Scholes model is easiest to describe by using examples that describe the model and its inputs. For example, suppose the price of AEP stock closed at \$37 today. And suppose I am offered an option that will give me the right, but not the obligation, to purchase one share of AEP stock six months from today at

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<sup>140</sup> AEP Ohio response to OCC INT-037 (attached as Exhibit JAL-21).

<sup>141</sup> *In re Application of Columbus S. Power Co.*, 128 Ohio St.3d 512, 947 N.E.2d 655, 2011-Ohio-1788, at ¶ 23 (2011). (emph. added).

<sup>142</sup> *In re Application of Ormet Primary Aluminum Corp.*, 129 Ohio St.3d 9, 2011-Ohio-2377, at ¶15 (2011) (emph. added), quoting *Constellation NewEnergy, Inc. v. Pub. Util. Comm.*, 104 Ohio St.3d 530, 2004-Ohio-6767, at ¶ 39 fn.5.

1 a price of \$40. That price is called the *strike price* and this type of option is called a  
2 *European call option*, because it has a fixed exercise date. If AEP's stock increases to  
3 \$45 tomorrow, I cannot exercise my option to buy one share of AEP stock for \$40  
4 tomorrow because under the terms of the option I can only exercise it six months from  
5 now. A *European put option* would give me the right, but not the obligation, to sell one  
6 share of AEP stock six months from today at a price of \$40.

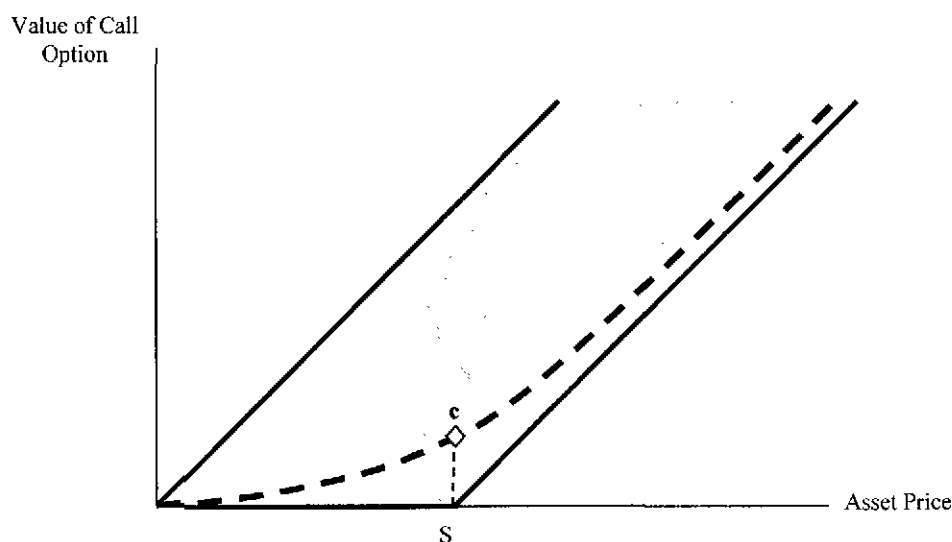
7 If, on that day six months from now, AEP's stock price is actually \$45, I will earn  
8 \$5 profit, because I can exercise my call option to buy the share of stock for \$40 and  
9 immediately sell it for \$45. Of course, the price of AEP's stock may not be \$45 six  
10 months from today. In fact, the price could fall to less than \$40. In that case, my call  
11 option would be worthless, but a put option would be worth the difference between \$40  
12 and the stock's closing price.

13 Intuitively, the value of the call option to buy one share of AEP's stock six  
14 months from today depends on the likelihood that the price will be greater than the \$40  
15 strike price at that time. And, because stock prices follow what is called a "random  
16 walk," the likelihood of the market price exceeding the \$40 strike price six months from  
17 today depends on how volatile the stock price is.

18 The Black-Scholes model calculates a *spot* option value. That is, the option value  
19 associated with buying or selling an asset (*e.g.*, stocks, bonds, gold, corn, etc.) on a fixed  
20 date in the future. The value of the spot option depends on a number of factors, including  
21 the volatility of the underlying asset's market price, the time until the option expires, and

the risk-free interest rate. The value of a call option always falls within the shaded area shown in Figure 1.<sup>143</sup>

**Figure 1: Call Option Value**



The reasons are as follows. First, ignoring the purchase price of the option itself, the value of the option can never be less than zero. For example, if I purchase a call option on AEP stock with a strike price of \$40, but the actual market price on the exercise date is \$35, I simply will not exercise the option. Second, the value of an option can never be greater than the price of the asset. If the price of AEP stock is \$45 on the exercise date, the value of the option cannot be greater than \$45. This defines the leftmost boundary of the shaded area, because along that line the value of the call option equals the asset price. Once the asset price exceeds the strike price, then the value of the option is positive. For example, if the price of AEP stock is \$45 and the option has a \$40 strike price, then the

<sup>143</sup> Adapted from L. Giacchino and J. Lesser, *Principles of Utility Corporate Finance*, (Vienna, VA: Public Utilities Reports, Inc. 2011), p. 305.

1 value of the option is  $\$45 - \$40 = \$5$ . The rightmost border of the shaded area is the line  
2 along which the call option value just equals the asset price less the strike price.

3 The market value of the call option when it is purchased will fall along the dashed  
4 line inside the shaded area. For example, if the strike price of the AEP stock option is  
5 \$40 and that is also the price of the stock the day the option itself is purchased, then the  
6 value of the call option must be positive. The reason is that, because the price of AEP  
7 stock is volatile, there is a non-zero probability that the price of the stock on the exercise  
8 date will be greater than \$40. Hence, the value of the option must be greater than zero. In  
9 fact, the value of the option today is, in essence, the expected net present value of the  
10 option on its exercise date. In Figure 1, the value of the option today is labeled as point c.  
11 The Black-Scholes option valuation model provides a compact formula for determining  
12 the value of call and put options.

13 **Q. WHAT WAS THE GENESIS OF THE BLACK-SCHOLES MODEL?**

14 A. Profs. Black and Scholes sought to determine what the value of stock options  
15 must be in order to avoid so-called “arbitrage” opportunities. In other words, by buying  
16 and selling combinations of stocks and a risk-free asset, called a “replicating portfolio,”  
17 in theory one could make an infinite amount of money. Because that’s not possible,  
18 Black and Scholes determined what the underlying price of stock options must be to  
19 eliminate those arbitrage opportunities.

20 **Q. IS THE BLACK-SCHOLES MODEL A “BINOMIAL” MODEL?**

21 A. Yes. Oddly, AEP Ohio touts the fact that its new “constrained” option model is a  
22 binomial model. However, the Black-Scholes model itself, as well as the related “Black”  
23 model are all binomial models. In fact, the Black-Scholes model is derived by assuming

1 prices follow a binomial (*i.e.*, two-branch) tree. The price of the asset, *e.g.*, the price of  
2 AEP Corporation stock, is assumed to either increase to a certain value, or decrease to a  
3 certain value. For example, a binomial model assumes that AEP's stock price either goes  
4 up or down from its previous closing price.<sup>144</sup>

5 What Black and Scholes did was determine a simple mathematical formula for the  
6 value of an option when the time period was shrunk, so that prices were changing  
7 continuously. An analogy is how a bank calculates interest on one's savings account.  
8 The bank may offer a simple interest rate of, say, 2% annually, compounded daily. That  
9 means the bank adds interest to the account every day, using a daily rate of (2/365)%. As  
10 a result, the effective annual rate will be slightly higher on an annual basis (2.02%). If  
11 the bank advertises that it compounds interest continuously, the effective annual interest  
12 rate is slightly higher.

13 What AEP Ohio's "constrained" binomial model does is create a "yes or no"  
14 decision tree for a consumer, determining whether the consumer will exercise the option  
15 to leave (and return). Thus, the "binomial" part is nothing more than a series of "yes" or  
16 "no" decisions as to whether to change service.

17 **Q. HOW DOES THE BLACK MODEL DIFFER FROM THE BLACK-SCHOLES**  
18 **MODEL?**

19 A. Black extended the Black-Scholes model to value futures options, and this  
20 extension is known as the Black model. A futures option is a right, but not the obligation,  
21 to enter into a futures contract.<sup>145</sup> A futures contract is just a standardized contract for the

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<sup>144</sup> For a discussion of binomial prices, see Leonardo R. Giacchino and Jonathan A. Lesser, *Principles of Utility Corporate Finance* (Vienna, VA: Public Utilities Reports, Inc. 2011), at 310-312.

<sup>145</sup> See *Id.*, pp. 294-298, for a discussion.

1 sale or delivery of a commodity, like corn or electricity, or a financial instrument, like a  
2 U.S. Treasury bond, at a specified time in the future. Futures contracts are actively  
3 traded in liquid markets, such as the New York Mercantile Exchange (“NYMEX”) or the  
4 Chicago Board of Trade (“CBOT”).

5 **Q. ARE THERE ELECTRICITY FUTURES CONTRACTS?**

6 A. Yes. For example, electricity futures contracts for delivery of power to the PJM  
7 West Hub during peak hours are traded on NYMEX. The size of each contract is 80  
8 megawatt-hours (“MWh”) delivered at a rate of 5 MW per peak hour over the 16-hour  
9 period from 7AM to 11PM, Monday-Friday.<sup>146</sup>

10 On Tuesday, June 14, 2011, the price of the August futures contract closed at  
11 \$67.40/MWh. Thus, if you purchased one futures contract for delivery in August 2011,  
12 you would be agreeing to pay \$67.40/MWh for 80 MWh of electricity to be delivered in  
13 August. If you sold that futures contract, you would agree to deliver 80 MWh of  
14 electricity at a price of \$67.40/MWh during peak-hours in August.

15 **Q. IF YOU BUY AN ELECTRICITY FUTURES OPTION, DO YOU HAVE TO**  
16 **PHYSICALLY TAKE THE ELECTRICITY?**

17 A. No. In fact, in most cases, holders do not take physical delivery. Instead, the  
18 contracts can be used to hedge risk. Suppose you hold one August 2011 electricity  
19 futures call option with a strike price of \$69/MWh. Suppose that on July 30, the closing  
20 price is \$70.00/MWh. If you exercise your option on that date, you will earn: 80 MWh x  
21  $(\$70/\text{MWh} - \$69/\text{MWh}) = \$80$ , and you will now hold a contract entitling you to 80  
22 MWh of electricity delivered in August at the current futures price. Thus, whereas a spot

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<sup>146</sup> The full contract terms can be found at: [www.cmegroup.com/trading/energy/electricity/pjm-western-hub-peak-calendar-month-real-time-lmp\\_contract\\_specifications.html](http://www.cmegroup.com/trading/energy/electricity/pjm-western-hub-peak-calendar-month-real-time-lmp_contract_specifications.html).

option provides the right, but not the obligation to buy or sell an asset, a futures option provides the right, but not the obligation, to enter into a specific futures contract. Either type of option can be used to hedge risk.

**Q. CAN CONSUMERS' OPTIONS TO RETURN TO SSO SERVICE BE BOUGHT AND SOLD IN THE MARKET LIKE ELECTRICITY FUTURES OPTIONS?**

A. No. This is another flaw in AEP Ohio's approach. The Black-Scholes and Black option pricing models are designed for options that are publicly traded in markets like NYMEX. One cannot trade consumers' options to return to SSO service.

**Q. DO YOU AGREE THAT AEP OHIO INCURS A NONCOMPETITIVE COST RELATED TO SSO CUSTOMERS MIGRATING AWAY FROM THE SSO OFFER?**

A. No. As I previously discussed, the "First-Leave Cost Component" described by AEP Ohio is not a noncompetitive cost, but a competitive cost of providing generation service. Migration away from the SSO results when market prices are expected to be lower than the SSO price for the foreseeable future. This is a risk of competitive markets, not a risk of being a POLR provider. When this occurs, AEP Ohio may sell any surplus generation into the PJM markets, so it is fully compensated for its generation at market prices and no additional POLR compensation is necessary.

Indeed, the Ohio Supreme Court has consistently described POLR charges as compensating utilities for standing ready to serve "customers who shop *and then return*."<sup>147</sup> In contrast, 88% of AEP Ohio's POLR charge is generated by the chance that customers might shop, regardless of whether they do shop, and regardless of whether

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<sup>147</sup> *In re Application of Ormet Primary Aluminum Corp.*, 2011-Ohio-2377, ¶ 15 (May 24, 2011) (emphasis added), quoting *Constellation NewEnergy, Inc. v. Pub. Util. Comm.*, 104 Ohio St.3d 530, 2004-Ohio-6767, ¶ 39 fn. 5.

1 they return to the SSO in the future. Hence, under AEP Ohio's own hypothesis, only  
2 12% of the POLR option value is related to customers returning to POLR service – which  
3 is the risk for which they may be compensated.

4 **Q. IS INCLUDING THE OPTION VALUE PURPORTEDLY RECEIVED BY**  
5 **CUSTOMERS LEAVING SSO SERVICE TO TAKE SERVICE FROM CRES**  
6 **PROVIDERS A LEGITIMATE COMPONENT OF AEP OHIO'S POLR**  
7 **CHARGE?**

8 A. No. The "First-Leave Cost Component" is the option value attributed to  
9 migrating customers. This is not a noncompetitive cost, but instead is a competitive cost  
10 of providing generation service. Migration away from the SSO results when market  
11 prices are expected to be lower than the SSO price for the foreseeable future. This is a  
12 risk of competitive markets, not a risk of being a POLR provider. When this occurs, AEP  
13 Ohio may sell any surplus generation into the PJM markets, so it is compensated for its  
14 generation at market prices and no additional POLR compensation is necessary or  
15 appropriate.

16 Moreover, to compensate AEP Ohio for the costs it incurs from customers  
17 deciding to take service from CRES providers would allow AEP Ohio to double-recover  
18 stranded generation costs. Also, just as AEP Ohio cannot recover "lost" revenues from  
19 customers who fuel-switch, it should not be allowed to recover "lost" revenues from  
20 customers who choose CRES providers. To do otherwise would negate the state's policy  
21 of encouraging market competition for electric supply.

22 **Q. DO COMPETITIVE ELECTRIC SUPPLIERS INCUR RISKS ASSOCIATED**  
23 **WITH THE POSSIBILITY OF CUSTOMERS ENDING SERVICE?**

24 A. Of course. Competitive electric suppliers must incorporate this risk into the  
25 prices they charge, as they cannot, unlike AEP Ohio seeks, charge customers even after



1 they switch. Indeed, AEP Service Company serves multiple tranches awarded in the  
2 FirstEnergy Ohio utilities' SSO auctions,<sup>148</sup> and it took on the risk of customers leaving  
3 service without the need for a nonbypassable POLR charge.

4 *b. Customer Option Value to Return to SSO Service is Not Equal to*  
5 *AEP Ohio's Cost*

6 **Q. AEP OHIO WITNESS MAKHIJA TESTIFIES THAT THE VALUE OF THE**  
7 **POLR OPTION TO AEP OHIO CUSTOMERS IS, BY DEFINITION, EQUAL TO**  
8 **THE COST INCURRED BY AEP OHIO. DO YOU AGREE?**

9 A. No. Dr. Makhija states that, "[t]he benefits provided to the customers cannot  
10 appear out of thin air. Someone has to provide these benefits, and for that party it  
11 constitutes a cost. The cost to the utility that provides the POLR optionality is no more or  
12 less than the value of the option received by the customers."<sup>149</sup> That is incorrect.

13 To understand why, suppose you have been wandering in the desert and are  
14 extremely thirsty. In fact, you are so thirsty that you would pay \$100 for a bottle of  
15 water. Suddenly, you come to a grocery store. You rush in and discover the store sells  
16 large bottles of cold water for one dollar. You reach into the cooler for a bottle and start  
17 drinking it before you reach the cash register.

18 Feeling refreshed, you pay the cashier a dollar for the bottle of water you have  
19 consumed. You would have been willing to pay up to \$100 for the bottle of water. So,  
20 you received \$99 worth of additional benefit, what economists call "consumer's surplus."

21 Now, consider this transaction from the store's point of view. If selling the bottle of

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<sup>148</sup> See, e.g., In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Authority to Establish a Standard Service Offer Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan, Case No. 08-935-EL-SSO, Auction Manager's Redacted Notification of SSO Auction Results, filed Jun. 5, 2009, at pp. 4-5.

<sup>149</sup> Makhija Direct at 3:7-10.

1 water cost the store two dollars, based on the actual cost to stock and sell the bottle of  
2 water, presumably the store would not sell it for less than two dollars. Thus, it must be  
3 the case that the store's cost was less than one dollar. In fact, suppose the store's cost  
4 was 75 cents. In that case, the store benefited by 25 cents, what economists call  
5 "producer's surplus." Clearly, the value of the bottle of water to you was much different  
6 than the cost of the water to the store.

7 **Q. DOES THIS SAME PRINCIPLE APPLY TO FINANCIAL OPTIONS?**

8 A. Yes. For example, the reason someone will buy a call option is that he values the  
9 option at least as much as its market price. Similarly, the reason someone will sell that  
10 same call option is that the revenue he receives from selling the option is greater than the  
11 expected cost. The market price is determined by the interactions of those wishing to buy  
12 the option and those wishing to sell, settling when the last buyer values the option the  
13 same as the last seller values it. Dr. Makhija's statement applies only for the last  
14 (marginal) buyer and seller. For all others, the value of the option to the buyer is greater  
15 than the cost to the seller.

16 The fact that I can buy a futures option today for delivery of electricity into PJM  
17 in August at a known average market price does not mean I will buy that option. I will  
18 only do so if I value the option at least as much as its market price today. As the futures  
19 option for peak-hour August delivery continues to be traded until the market for it closes  
20 (on July 31), its price will change, reflecting changes in buyers' and sellers' expectations  
21 of actual market prices during the month of August. However, these expectations are not  
22 necessarily related to the seller's cost.

1 **Q. AEP OHIO WITNESS LACASSE COMPARES AEP OHIO'S PROPOSED POLR**  
2 **CHARGE TO THE RESULTS OF TWO COMPETITIVE BIDDING**  
3 **PROCUREMENT AUCTIONS. IS THIS AN "APPLES TO APPLES"**  
4 **COMPARISON?**

5 A. No, it is not an apples to apples comparison. Dr. LaCasse relies upon studies  
6 prepared by The Northbridge Group and by the Illinois Commerce Commission that  
7 calculated "premiums" above cost included in winning bids for SSO-type supply  
8 products.<sup>150</sup> Yet she admits that the premiums identified in those studies encompass  
9 more than just shopping-related risk.<sup>151</sup> The "premiums" include, without limitation,  
10 uncertainty in demand, cost component risk, and shopping related risk.

11 In addition, the "premiums" are collected as part of bypassable charges. This is  
12 very different from AEP Ohio's proposed POLR charge, which is nonbypassable other  
13 than for those very few customers who choose not to pay the POLR charge after  
14 switching. The POLR charge that would be required by a competitive supplier would be  
15 higher for a bypassable POLR charge than it would be for a nonbypassable POLR charge  
16 under the same circumstances. The reason for this is simple. Assuming a fixed POLR  
17 charge, a nonbypassable charge would be imposed on more customers, and thus would be  
18 lower on a per customer basis than a bypassable charge which would be paid for by fewer  
19 customers to the extent shopping occurred. Thus, all else equal, one would expect that  
20 AEP Ohio's nonbypassable POLR charge would be lower than estimates of competitive  
21 bypassable POLR charges. Therefore, it is likely that AEP's calculated POLR charge is  
22 too high.

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<sup>150</sup> See LaCasse Direct at 11-13.

<sup>151</sup> *Id.* at 9:14-15.

1 Dr. LaCasse inappropriately uses studies that compare an effectively  
2 nonbypassable POLR charge with a bypassable POLR charge. These studies also  
3 analyze “premiums” which include factors other than the POLR charge. As a result,  
4 these studies are not relevant to this dispute, and should not be credited by the  
5 Commission.

6 **Q. HAS AEP OHIO PURSUED A COMPETITIVE BIDDING PROCESS OR TAKEN**  
7 **OTHER STEPS TO INSURE AGAINST ITS PURPORTED POLR RISK?**

8 A To my knowledge, AEP Ohio has not pursued a competitive bidding process  
9 similar to the studies analyzed by Dr. LaCasse. AEP Ohio has also failed to present any  
10 evidence establishing that it has taken any steps to insure against its purported POLR  
11 risk, such as engaging in hedging transactions to limit this risk, or any evidence of any  
12 costs it has incurred related to the purported POLR risk.<sup>152</sup>

13 *c. The Black Model Is Not Appropriate For Use In This Case Because*  
14 *Several Essential Assumptions Of The Black Model Are Not Met.*

15 **Q. WHAT ASSUMPTIONS FORM THE BASIS FOR THE BLACK MODEL?**

16 A. The model assumes the following:  
17 1. Markets are perfect and there are no transactions costs.  
18 2. Price volatility is constant.  
19 3. The risk-free interest rate is constant over time.  
20 4. The strike price is constant.  
21 5. The returns on the underlying asset are distributed lognormally.  
22 6. The option can be exercised only on the expiration date (European option).

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<sup>152</sup> See AEP Ohio response to OCC INT-020 (attached as Exhibit JAL-22).

1 **Q. ARE THESE ASSUMPTIONS SO RESTRICTIVE THAT THE MODEL CANNOT**  
2 **BE USED TO VALUE ANY OPTIONS?**

3 A. No. Despite the limiting assumptions, the Black model, like the better-known  
4 Black-Scholes model, is a useful tool that can quickly estimate the value of a futures  
5 option. Options traders may not rely solely on these models, but they are extremely  
6 useful to establish initial estimates of option values. Moreover, the data used to estimate  
7 option values is all observable. Option prices then change over time based on market  
8 factors, including the expectations of market participants. However, the Black model is  
9 not appropriate for use to calculate AEP Ohio's POLR costs, as described in detail below.

10 **Q. DO THE SIX ASSUMPTIONS HOLD SUFFICIENTLY TO USE THE BLACK**  
11 **MODEL TO ESTIMATE THE AEP CUSTOMERS' OPTION VALUE OF POLR**  
12 **SERVICE?**

13 A. No. In my opinion, the Black model should not be used to value the option value  
14 of AEP Ohio customers to return to SSO service, because too many of the assumptions  
15 underlying the model do not apply. Moreover, the Black model is not designed to  
16 calculate the value received by the purchaser of an option, or the cost incurred by the  
17 seller of an option. Instead, this model is designed to price options for the purpose of  
18 engaging in financial transactions, including hedging. As AEP Ohio is attempting to use  
19 the model for purposes beyond which it was designed, AEP Ohio's proposed use of the  
20 Black model is inappropriate.

21 **Q. IS IT REASONABLE TO ASSUME THAT THE FIRST ASSUMPTION,**  
22 **MARKETS ARE PERFECT AND THERE ARE NO TRANSACTIONS COSTS,**  
23 **HOLDS FOR CUSTOMERS DECIDING TO RETURN TO SSO SERVICE?**

24 A. No. The Black model assumes perfectly rational consumers and zero transactions  
25 costs. These are reasonable assumptions for traders in futures markets, such as NYMEX

1 or the CBOT. Those markets are designed to minimize transactions costs and traders  
2 typically develop complex trading strategies based on their own expectations about the  
3 future.

4 In contrast, most electricity consumers are not options traders. They probably do  
5 not follow wholesale electric prices in PJM closely. Moreover, the fixed price options  
6 consumers can sign up for with CRES providers are designed so that consumers do not  
7 have to spend their time evaluating the wholesale market. Furthermore, under many of  
8 those options, consumers are committed to staying with a CRES provider for a defined  
9 time frame, meaning they do not have the option to return to SSO service within that time  
10 frame.

11 Second, a consumer who wishes to return to SSO service cannot do so  
12 instantaneously. The consumer must contact AEP Ohio and arrange to have the  
13 Company start providing him with service on a specified date (this date is potentially  
14 limited by switching rules imposed by the Commission and by contract). That is quite  
15 different from the options trader who will make buy and sell decisions on a minute-to-  
16 minute basis.

17 **Q. DOES THE “PERFECTLY RATIONAL CUSTOMER” EXPECTATION**  
18 **ASSUME THAT CUSTOMERS WILL ALWAYS ACT PERFECTLY IN THEIR**  
19 **ECONOMIC SELF-INTEREST?**

20 **A.** Yes. The Black model assumes that market participants will always act in their  
21 economic self-interest. For the purposes of this analysis, this means that the Black model  
22 assumes that all customers will switch to a CRES provider whenever market prices are  
23 lower than the strike price, and will switch back to AEP whenever market prices rise  
24 above the strike price. As recognized by AEP Witness LaCasse, not all customers will

1 necessarily switch to a CRES provider the moment that it may be advantageous to do  
2 so.<sup>153</sup> The corollary is that not all customers will chose to return, and not all customers  
3 under contracts with defined terms will be able to return, to SSO service when it is  
4 economically advantageous to do so. This means that the Black model's assumption that  
5 customers will always and immediately act in their economic self-interest is not met, and  
6 AEP's POLR calculation is accordingly overstated.

7 **Q. WHY IS THE STRIKE PRICE NOT CONSTANT?**

8 A. The strike price in AEP Ohio's model is the ESP price. However, the ESP price  
9 varies over the term of the ESP period. Specifically, the fuel cost added onto the base  
10 generation price changes over time. Several other components of AEP Ohio's ESP price  
11 are in riders that also are expected to increase over time. This violates one of the  
12 fundamental assumptions of the Black model.

13 Furthermore, the ESP price is correlated with the PJM market price. This violates  
14 another fundamental assumption of the Black model. Specifically, the ESP price is, in  
15 part, based on AEP Ohio's fuel costs, and fuel prices also affect the market price of  
16 electricity in PJM. The prices of different fuels determine the marginal generating  
17 resource in PJM and, hence, the market clearing price. As fuel prices change, the  
18 marginal cost of generation changes, which will generally change the PJM market price,  
19 all other things being equal. As fuel prices decrease, we can expect to observe lower  
20 market-clearing prices in PJM, again holding all other things equal. Thus, the ESP price  
21 is correlated with the underlying market price, even if the underlying market price – the  
22 competitive benchmark price – is an artificial construct put together by AEP Ohio itself.

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<sup>153</sup> See LaCasse Direct Testimony at 15:15-18.

1 **Q. CAN OPTIONS BE VALUED IF THE STRIKE PRICE IS CORRELATED WITH**  
2 **THE PRICE OF THE UNDERLYING ASSET?**

3 A. Yes. However, one cannot use either the Black-Scholes or Black models to do so.  
4 Instead, such options must be valued using empirical models, such as Monte-Carlo  
5 models that examine the option's value under multiple price paths. As the strike price is  
6 correlated to the price of the underlying asset in this case, AEP Ohio's purported POLR  
7 charge again may be overstated.

8 **Q. THE FIFTH ASSUMPTION IS THAT RETURNS ARE LOGNORMALLY**  
9 **DISTRIBUTED. WHAT DOES THAT MEAN?**

10 A. Most of us are familiar with a bell-shaped curve, which corresponds to a normal  
11 distribution. For example, if I measured the heights of a random sample of 1,000 adults,  
12 the heights would be distributed like a normal bell-shaped curve. A lognormal  
13 distribution is one where the logarithm of the underlying values is normally distributed,  
14 hence the term "lognormal."

15 The Black-Scholes and Black models assume that returns on the asset are  
16 lognormally distributed. For example, suppose we measure the daily returns on a stock  
17 that does not pay dividends. (A dividend paying stock's returns are more complex  
18 because of the dividend payments themselves.) The daily return is just the ratio of  
19 today's stock price divided by yesterday's, minus one. So, if XYZ Corporation's stock  
20 closed at \$50/share yesterday and closed at \$52 today, the return would equal  $\$52/\$50 =$   
21  $1.04 - 1 = 4.0\%$ .

22 Assuming XYZ Corp. has not fundamentally changed over the relevant period,  
23 we could examine the daily returns over, say, a one-year period. Next, we would  
24 calculate the logarithms of each of the daily returns. If the resulting distribution of those



1 daily returns looked like a bell-shaped curve, then the returns are lognormally distributed.  
2 Empirically, this has been found to be true for stocks.

3 **Q. ARE THE “RETURNS” ON PJM WHOLESALE ELECTRIC PRICES**  
4 **LOGNORMALLY DISTRIBUTED?**

5 A. The distribution of the logarithm of daily price changes in the PJM wholesale  
6 market is not clear. For example, according to a study published by Michael Guth,  
7 Managing Director of Risk Management Consulting, “Most pricing models and software  
8 used in the power industry assume prices are lognormally distributed and their returns are  
9 normally distributed. As shown in this article, other distributions fit power price data  
10 much better than either the lognormal or normal distribution.”<sup>154</sup>

11 Even if the underlying PJM wholesale market is lognormal, the distribution of the  
12 logarithm of daily retail price changes paid by consumers is almost certainly not  
13 lognormal. The value of the option to return will depend on the volatility of the retail  
14 market price, *i.e.*, the competitive benchmark price. Given the multitude of competitively  
15 priced alternatives, including fixed price options that last 1-3 years, there is simply no  
16 basis to conclude that the distribution of retail price “returns” is lognormally distributed.  
17 Accordingly, this assumption of the Black model is not met, and the POLR charge may  
18 be overstated.

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<sup>154</sup> M. Guth, “Benefits of Accurately Determining Electricity Price Distributions: Better Risk Metrics, Beating the Market on Trades,” *The Risk Desk* (January 2002). Available at: <http://michaelguth.com/economist/tradejournals/benefitsaccurately.htm>.

1 **Q. THE SIXTH AND FINAL ASSUMPTION CONCERNS WHEN THE OPTION TO**  
2 **RETURN CAN BE EXERCISED. DOES SHOPPING RISK CONFORM TO THE**  
3 **DEFINITION OF A EUROPEAN OPTION, AS REQUIRED BY THE BLACK**  
4 **MODEL?**

5 A. No. A European option has a fixed exercise date. Because customers can return  
6 to SSO service whenever they please (unless bound by a contract for a definite term)<sup>155</sup>,  
7 their option more closely resembles what is called an American option. Unlike a  
8 European option, an American option can be exercised at any time up to its expiration  
9 date. As a result, the model run by AEP Ohio does not accurately value the risk of  
10 customers returning to SSO service.

11 **Q. WHY IS AN AMERICAN OPTION APPROPRIATE FOR VALUING**  
12 **CONSUMERS' OPTION TO RETURN TO SSO SERVICE?**

13 A. An American option more accurately describes the option value to consumers  
14 because CRES customers can return to SSO service whenever they choose. Such  
15 customers must remain with AEP Ohio for specified periods of time, but there are no  
16 restrictions imposed by AEP Ohio as to when a customer can return to AEP Ohio.

17 **Q. HOW DOES AEP OHIO ESTIMATE THE OVERALL OPTION VALUE?**

18 A. According to Ms. Thomas, AEP Ohio used the "same basic model" as it used for  
19 the 2009-2011 ESP, taking into account the switching constraints in AEP Ohio's current  
20 tariffs.<sup>156</sup> In the 2009-2011 ESP, as described by AEP Ohio witness Baker in Case No.  
21 08-917-EL-SSO, the option value was modeled as a series of European options. The  
22 "binomial expansion that implemented the switching rules appropriate to each customer

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<sup>155</sup> Fixed-term and fixed-price contracts with CRES providers add an additional complication, which I discuss below.

<sup>156</sup> Thomas Direct at 18:5-7.

1 class,”<sup>157</sup> described by AEP Ohio witness LaCasse represents a series of European  
2 options, in which a customer makes an “either-or” decision to stay with competitive  
3 service or return to SSO service, hence the “binomial” (Yes – return to SSO service; No –  
4 continue with what I have) model structure. Ms. Thomas notes that “customers generally  
5 face monthly decisions as to whether or not they will switch to another supplier.”<sup>158</sup> I  
6 presume, therefore, that AEP Ohio modeled customer decisions on a monthly basis, other  
7 than for certain customers who, as Ms. Thomas explains, have 90-day notice  
8 requirements.<sup>159</sup> In such cases, I presume that AEP Ohio’s model estimates option values  
9 using a series of European options with 90-day exercise dates. The Black model is not  
10 suitable for this purpose.

11 *d. AEP Ohio’s Claims Regarding The Black Model Are Overstated.*

12 **Q. AEP OHIO WITNESS THOMAS CLAIMS THAT, “IN EXCHANGE FOR THE**  
13 **PAYMENT OF POLR CHARGES, CUSTOMERS RECEIVE THE OPTION OR**  
14 **RIGHT TO SWITCH SUPPLIERS AND RETURN TO THE COMPANY AT SSO**  
15 **GENERATION RATES WHEN THEY CHOOSE TO DO SO.”<sup>160</sup> DO YOU**  
16 **AGREE THAT THE BLACK MODEL CALCULATES THE COST OF THIS**  
17 **RISK?**

18 **A.** No. As discussed above, the Black model calculates the initial market value of an  
19 option. The option also provides a calculation for market participants to calculate an  
20 arbitrage value for the asset underlying the option. However, nothing in the Black model  
21 is intended to estimate the cost of the risk to the seller of an option (AEP Ohio) of  
22 providing this option. The Black model simply is not designed to estimate the potential

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<sup>157</sup> LaCasse Direct at 13:9-10.

<sup>158</sup> Thomas Supplemental at 18:17-18.

<sup>159</sup> *Id.* at 16:1-3.

<sup>160</sup> Thomas Supplemental at 2:22-24.

1 risk assumed by the seller of an option, as this risk is dependent on factors outside of the  
2 Black model, such as the actual out-of-pocket cost to AEP Ohio of providing energy to  
3 returning customers and AEP Ohio's potential hedging of this risk through other  
4 transactions.

5 **Q. AEP OHIO WITNESS MAKHIJA CLAIMS THAT AEP'S COST OF**  
6 **PROVIDING "THE POLR OPTIONALITY IS NO MORE OR LESS THAN THE**  
7 **VALUE OF THE OPTIONS RECEIVED BY THE CUSTOMERS."<sup>161</sup> DO YOU**  
8 **AGREE THAT THE BLACK MODEL CALCULATES THE VALUE OF THE**  
9 **OPTIONS RECEIVED BY THE CUSTOMERS?**

10 A. No. The Black model was designed to price options for the purpose of hedging  
11 transactions for the underlying asset, and the actual price of an option is then subject to  
12 traditional market forces. The Black model was not designed to calculate the "value" of  
13 the options received by AEP Ohio's customers. Moreover, as discussed above, the value  
14 of the options received by customers has no relationship to the cost incurred by AEP  
15 Ohio, as each customer will value this optionality differently.

16 ***e. AEP Ohio Has Used Incorrect Input Values in the Black Model***

17 **Q. DESPITE THE EXPLANATION YOU HAVE JUST PROVIDED, IF ONE**  
18 **ASSUMES *ARGUENDO* THAT USING THE BLACK MODEL CAN BE USED**  
19 **TO VALUE CUSTOMERS' POLR OPTION VALUE, HAS AEP OHIO USED**  
20 **THE CORRECT INPUTS?**

21 A. No. Even if, *arguendo*, one assumes the Black model provides a valid estimate of  
22 consumers' option value to return to SSO service and that this option value equals AEP  
23 Ohio's cost to provide POLR service, the Company has still used incorrect values in the  
24 model. Specifically, AEP Ohio has used a volatility estimate that is too large, thus  
25 artificially increasing the calculated option values.

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<sup>161</sup> Makhija Direct Testimony at 3:9-10.

1   **Q.   WHAT VOLATILITY ESTIMATE DOES AEP OHIO USE?**

2   A.           AEP Ohio used in the Black Model an estimate of the volatility of the PJM  
3           wholesale market, which, according to Ms. Thomas's workpapers, decreases from 27% in  
4           2012 to 24% in 2014.<sup>162</sup> That is the wrong volatility for valuing the option to return to  
5           SSO service because customers do not pay the wholesale market price. Rather, they pay a  
6           retail market price, which AEP Ohio assumes is the Competitive Benchmark Price  
7           developed by Ms. Thomas. The volatility of the Competitive Benchmark Price is  
8           significantly less than the volatility of the PJM wholesale market price, meaning that  
9           AEP Ohio overestimates the option value in the Black model.

10   **Q.   PLEASE EXPLAIN WHY THE VOLATILITY OF THE COMPETITIVE**  
11   **BENCHMARK PRICE IS LESS THAN THE VOLATILITY OF THE PJM**  
12   **WHOLESALE MARKET PRICE.**

13   A.           The Competitive Benchmark Price begins with the "ATC simple swap" price,  
14           which is just the "around-the-clock" (i.e., peak and off-peak hours) forward price in the  
15           PJM market. To that ATC price, however, is added the basis differential between the  
16           AEP Dayton hub price and the AEP load zone, a load following/shaping adjustment, a  
17           capacity cost based on AEP Ohio's alleged cost of capacity (as discussed extensively  
18           above), an assumed cost for ancillary services, an assumed cost associated with  
19           distribution and transmission system losses, an assumed cost for transaction risk, an  
20           offset for congestion costs, and an assumed retail administration fee.

21           The Competitive Benchmark Price thus adds to the PJM market price what are  
22           essentially a number of fixed costs. As such, the volatility of the PJM market price is  
23           effectively "dampened" by the fixed costs. For example, in Ms. Thomas's Exhibit LJT-1,

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<sup>162</sup> Thomas Direct, Workpapers, at p. 9.

1 she assumed an average PJM market price of \$40.59/MWh in 2012. For CSP residential  
2 customers, Ms. Thomas then added to that PJM market price an additional \$47.59 in  
3 fixed costs, arriving at an overall Competitive Benchmark Price of \$88.18/MWh.

4 In estimating option value using the Black model, AEP Ohio used as the “market”  
5 price the Competitive Benchmark Price. The reason is that AEP Ohio assumed customer  
6 switching back to POLR would take place if the Competitive Benchmark Price exceeded  
7 the ESP. However, AEP Ohio used the higher volatility estimate for just the PJM market  
8 price, not the lower volatility estimate for the Competitive Benchmark Price. Yet, it is  
9 the volatility of the latter that determines the POLR option value. As such, AEP Ohio has  
10 used the wrong volatility measure in its model and significantly overestimated the correct  
11 volatility.

12 **Q. CAN YOU PROVIDE AN EXAMPLE SHOWING THAT THE VOLATILITY OF**  
13 **THE COMPETITIVE BENCHMARK PRICE, WHICH INCLUDES FIXED**  
14 **COSTS, IS LOWER THAN THE VOLATILITY OF JUST THE PJM MARKET**  
15 **PRICE?**

16 A. Yes. Using the data from Exhibit LJT-1, I constructed a set of PJM prices whose  
17 average equaled Ms. Thomas’s ATC 2012 swap price of \$40.59. To evaluate the impacts  
18 of adding the fixed price components of the Competitive Benchmark Price, I constructed  
19 a set of 365 daily prices such that the daily returns would have a corresponding annual  
20 volatility of approximately 0.27, or 27%, the value that Ms. Thomas reports in her  
21 workpapers.<sup>163</sup> I then added to each of the randomized PJM daily prices the \$47.59 in  
22 other costs that make up the remainder of the \$88.18/MWh 2012 residential Competitive

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<sup>163</sup> Because I used a set of 365 random numbers, the actual volatility will differ slightly. I also repeated the exercise numerous times using a Monte-Carlo approach to confirm that the volatility of the individual samples would average very close to AEP Ohio’s 27% value.

1 Benchmark Price, recalculated the daily returns, and estimated the resulting volatility.  
2 That volatility averaged around only 14.5%.<sup>164</sup> Therefore, AEP Ohio's volatility input to  
3 the Black model substantially over-values shopping risk.

4 Because AEP Ohio used different Competitive Benchmark Price component  
5 values for the residential, commercial, and industrial customer classes, the volatilities for  
6 each class's "market price" would also be different, unlike AEP Ohio's assumption of  
7 constant volatilities for all three customer classes.

8 **Q. IF CUSTOMERS WHO PURCHASE ELECTRICITY FROM CRES PROVIDERS**  
9 **RECEIVE FIXED PRICE OFFERS, DOES THAT AFFECT THE VOLATILITY**  
10 **ESTIMATE THAT SHOULD BE USED?**

11 A. Yes. For example, CRES providers offer commercial and industrial customers  
12 fixed price offers of varying durations, but they are predominantly for specified terms  
13 such as one, two, or three years. Customers who sign up for such contracts have limited  
14 switching abilities, thereby reducing their option value to return to SSO service. For  
15 example, a customer who signs up for a three-year fixed price contract at the start of a  
16 three-year ESP would not have the option to switch back to SSO, and thus could have no  
17 option value for switching back.

18 **Q. IF CUSTOMERS ARE EVALUATING FIXED PRICE OFFERS FOR**  
19 **DIFFERENT TIME PERIODS, THEN SHOULD THEIR OPTION VALUES OF**  
20 **RETURNING TO SSO SERVICE BE BASED ON VOLATILITY IN THE PJM**  
21 **MARKET?**

22 A. Absolutely not. This is another fundamental error of the AEP Ohio option model  
23 framework. The AEP Ohio model assumes that customers who purchase from CRES

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<sup>164</sup> The daily return on the electric price equals the logarithm of the ratio of price on day t divided by the price on day t-1, i.e.,  $\ln(P_t/P_{t-1})$ . The daily volatility is just the standard deviation of these returns. To calculate the annualized volatility, the daily volatility value is multiplied by the square root of the number of trading days per year, typically assumed to be 252.

1 suppliers pay the daily PJM market price, thus experiencing significant price fluctuations.  
2 However, even correcting for the competitive benchmark price fixed price “adders” that  
3 AEP assumes, the actual price volatility still does not reflect the actual economic  
4 comparisons on which customers will base SSO-return decisions.

5 Customers who have switched to CRES providers will face different volatilities,  
6 and thus have different option values, depending on the type of CRES service they  
7 purchased. For example, a customer could sign up for a CRES offer that provided a fixed  
8 price for one year that was below the ESP price. Unless the CRES provider defaults, that  
9 customer will never switch back to the ESP during the first year. The volatility of the  
10 PJM market price has no bearing on that customer’s rational economic decisions.  
11 Moreover, that customer’s option values would not be properly valued as a series of  
12 monthly European options because the customer would not have the option to switch  
13 prior to the end of the one-year contract. Instead, for that customer, the option value  
14 would be properly determined based on a one-year European option. Because AEP Ohio  
15 included the higher PJM volatility for all customers in its analysis, and, as discussed  
16 above, that PJM volatility is inapplicable and overstated, it has significantly overstated  
17 the option value.

18 *f. AEP Ohio Has Not Identified Any Actual POLR-Related Costs*

19 **Q. HOW WOULD AEP OHIO PLAN TO MEET RETURNING CUSTOMER**  
20 **DEMAND?**

21 A. Based on my experience in the industry and standard industry best practices, I  
22 presume AEP Ohio would use the long-term forecasts of customer demand it prepares to  
23 evaluate alternative strategies, taking account of the uncertainty over future PJM market  
24 prices, environmental regulations, fossil fuel prices, and so forth. In essence, AEP Ohio



1 would conduct a two-step process. The first step would identify the risk, based on the  
2 likelihood of customers switching back from CRES providers to SSO service. The  
3 second step would price the risk, based on AEP either purchasing hedges, such as  
4 electricity futures options, or auctioning off its POLR risk to competitive suppliers.

5 **Q. EARLIER, YOU QUOTED FROM DR. LACASSE'S TESTIMONY, IN WHICH**  
6 **SHE DISCUSSES HOW COMPANIES WITHOUT GENERATING ASSETS CAN**  
7 **AUCTION OFF THEIR POLR-OBLIGATIONS. DOES AEP OHIO**  
8 **OWNERSHIP OF GENERATING ASSETS MEAN IT CANNOT DO THE SAME?**

9 A. No. First, as FES witness Banks recommends, AEP Ohio can complete its legal  
10 separation and spin-off its generating assets, which could then participate in the auction.  
11 Second, AEP Ohio is not required to meet its POLR obligation with its own generating  
12 assets. Thus, I am not aware of anything preventing AEP Ohio from auctioning off both  
13 its SSO and POLR obligations, or auctioning just its POLR obligation.

14 **Q. COULD AEP OHIO "STAND READY TO SERVE" SSO CUSTOMERS BY**  
15 **COMPARING PJM MARKET PRICES FOR ENERGY TO THE COST OF ITS**  
16 **OWN GENERATING RESOURCES?**

17 A. Yes. Prudent utilities will evaluate all options for providing energy, including  
18 PJM pricing. As I have no reason to believe that AEP Ohio is not prudent, I would  
19 presume AEP Ohio planners evaluate all resource alternatives, including purchases from  
20 the market, as well as evaluate the cost of potential hedging strategies that meet the  
21 increased demand for energy if customers return to SSO service.

1 **Q. IF AEP OHIO AUCTIONED OFF ITS POLR OBLIGATION, WOULD ALL**  
2 **BIDDERS INTO SUCH A COMPETITIVE PROCUREMENT BID EXACTLY**  
3 **THE SAME AMOUNT TO PROVIDE FULL REQUIREMENTS SERVICE TO**  
4 **SSO CUSTOMERS?**

5 A. It is theoretically possible, but to the extent that competitive bidders have  
6 different risk management strategies, different portfolios, and so forth, it is doubtful that  
7 all bidders would bid the exact same amount. Successful bidders receive the auction  
8 clearing price without any additional risk premium recovered through a separate POLR  
9 charge.

10 **Q. DOES AEP OHIO NEED TO ACQUIRE ADDITIONAL CAPACITY TO SERVE**  
11 **RETURNING SSO CUSTOMERS?**

12 A. No. Because AEP Ohio elected the FRR option, rather than participate in PJM's  
13 RPM capacity market, the Company is already obligated to satisfy PJM's resource  
14 adequacy (capacity) requirement. When a customer returns to SSO service, AEP has no  
15 need to secure any additional capacity resources. Likewise, when a customer is supplied  
16 by a CRES, AEP Ohio is paid by the CRES for supplying that capacity. Thus, AEP  
17 Ohio's capacity costs are independent of customers shopping and/or returning to SSO  
18 service, and AEP Ohio incurs no additional capacity costs related to POLR service.

19 **Q. DR. LACASSE STATES THAT THE VALUE OF THE OPTION MEASURES**  
20 **THE EXPECTED COST TO THE ELECTRIC DISTRIBUTION UTILITY**  
21 **(“EDU”) ON AN A PRIOR BASIS.<sup>165</sup> DO YOU AGREE?**

22 A. No. Moreover, Dr. LaCasse's own description of a competitive procurement  
23 process that I quoted previously demonstrates why. First, the value of the option to  
24 consumers to return to POLR is not the same as the market price of such an option, even  
25 if such an option existed. Second, the fact that competitive bidders will bid different

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<sup>165</sup> *Id.* at 14:12.

1 amounts to take on all of the EDU's risk shows that bidders have different expectations  
2 of the costs to provide SSO service and take on the EDU's POLR risk. It is the bids that  
3 are the *a priori* expected cost – including a risk-based return – of taking on the POLR  
4 risk. The fact that bidders have different expectations of the costs of providing SSO  
5 service for the EDU, and assuming all of the EDU's POLR risk, proves that AEP Ohio's  
6 cost to provide POLR service is not equal its customers' option value.

7 **Q. IN ITS RESPONSE TO OCC INT-R1-002 IN CASE NOS. 08-917-EL-SSO AND 08-**  
8 **918-EL-SSO, AEP OHIO SETS FORTH HOW THE COMPANY INCURS POLR-**  
9 **RELATED COSTS BY PURCHASING HEDGES. PLEASE DISCUSS.**

10 A. In two, one-page documents, entitled "POLR Cost to AEP.docm" and  
11 "polr\_example.pdf," respectively (collectively attached as Exhibit JAL-23), AEP Ohio  
12 sets forth how its POLR cost exactly equals the value of an option using a hypothetical  
13 example. Although this example deals with a customer leaving SSO service, and thus, as  
14 I previously discussed, cannot be considered a legitimate POLR-related cost, the example  
15 itself is still useful.

16 Specifically, in this example, AEP Ohio assumes that the customer's ability to  
17 switch to a competitive supplier provides the customer with a "put" option. A "put"  
18 option provides the customer with the right, but not the requirement, to sell the SSO  
19 electricity he consumes back to AEP Ohio. In the AEP Ohio example, if the market price  
20 of electricity falls below the ESP price, the customer "exercises" the put by taking  
21 competitive electric service, and presumably paying the lower market price. If the  
22 market price increases, the customer continues to take SSO service from AEP Ohio.  
23 Thus, the put is not "exercised."

1           In the example, AEP Ohio shows that, to hedge against the risk of losing the  
2           customer and having to sell the electricity the customer had purchased from AEP Ohio at  
3           the lower market price, it sells a forward contract. In essence, AEP Ohio agrees to sell  
4           power at a specific price to a counterparty. In the example, the forward price is  
5           \$77.72/MWh. So, if the market price increases to \$90.51/MWh in the example, the  
6           customer stays with AEP Ohio, but AEP Ohio must purchase \$90.51/MWh electricity to  
7           cover the forward it sold at \$77.52/MWh. AEP therefore loses money. If, however, the  
8           market price decreases to the \$66.51/MWh in the example, AEP Ohio makes money on  
9           the forward sale, but loses money because the customer leaves SSO service. The  
10          example shows that, in either case, AEP Ohio loses money, because it hedged the market  
11          price risk by selling the forward. Moreover, the amount of money AEP Ohio loses, \$1.78  
12          in the example, equals the value of the put option to the customer. Apparently, this  
13          example is used by AEP Ohio to demonstrate why the value of the option to customers is  
14          exactly equal to AEP Ohio's POLR-related costs.

15   **Q.   DO YOU AGREE THAT THIS HYPOTHETICAL EXAMPLE PROVES THAT**  
16   **AEP OHIO'S POLR COST EQUALS THE OPTION VALUE TO THE**  
17   **CUSTOMER?**

18   **A.**       No. The reason is that AEP Ohio admits it doesn't hedge its risks in this way. In  
19           other words, there is no evidence that AEP Ohio actually purchased or sold forwards or  
20           any other derivatives instruments such as the one it posits in the hypothetical example.  
21           Instead, according Ms. Thomas's response to OCC-INT-1-020 (attached as Exhibit JAL-  
22           22), AEP Ohio "effectively self-insured" its POLR risk for the current ESP that ends on  
23           December 31, 2011. Because AEP Ohio doesn't actually hedge its risk in this manner,

1           those hedge costs are irrelevant in establishing AEP Ohio's POLR costs and, as such,  
2           establishing a POLR rider.

3   **Q.   DID MS. THOMAS EVER DEFINE WHAT SHE MEANT BY "EFFECTIVELY**  
4   **SELF-INSURE?"**

5   A.           No.

6   **Q.   ARE THERE ANY ACTIONS YOU WOULD CONSIDER "SELF-INSURING"**  
7   **AGAINST POLR-RELATED COSTS?**

8   A.           Yes. AEP could purchase hedges to insure against the risk of customers returning  
9           to SSO service. Another approach would be to designate a certain level of retained  
10          earnings to cover the additional costs of customers returning to SSO service. Still  
11          another approach would be to establish an actual cash account to cover those same costs.

12   **Q.   WHAT EVIDENCE HAS AEP OHIO PROVIDED TO DOCUMENT THE COSTS**  
13   **OF SELF-INSURANCE?**

14   A.           I am not aware that AEP Ohio has provided any documentation whatsoever of the  
15          costs associated with "self-insurance," nor how AEP Ohio actually intends to "effectively  
16          self-insure." It appears that AEP Ohio decided it would simply absorb any POLR-related  
17          costs. This is not "self-insurance," but going without insurance. AEP Ohio has not  
18          provided any evidence of what these costs will be. Indeed, AEP Ohio has made no effort  
19          to determine what its actual costs of migration have been during its current ESP.<sup>166</sup> Thus,  
20          I conclude any self-insurance costs are not known and measurable, and thus should not be  
21          included in a POLR rider which AEP Ohio claims is a cost-based rider.

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<sup>166</sup> See Columbus Southern Power Company's and Ohio Power Company's Response to Exelon's 5th set INT-5-060 (attached as Exhibit JAL-24).

1 **Q. YOU HAVE PREVIOUSLY DISCUSSED WHY “FIRST-LEAVE” COMPONENT,**  
2 **I.E., CUSTOMERS LEAVING SSO SERVICE FOR COMPETITIVE RETAIL**  
3 **ELECTRIC SUPPLIERS, IS NOT A LEGITIMATE POLR-RELATED COST.**  
4 **HAS AEP OHIO IDENTIFIED ANY CATEGORIES OF COSTS THAT IT WILL**  
5 **INCUR AS A RESULT OF CUSTOMERS RETURNING TO SSO SERVICE?**

6 A. No. The only reference is Dr. LaCasse’s general and unsupported statement  
7 regarding forgone revenues from off-system sales.<sup>167</sup> Dr. LaCasse does not quantify that  
8 cost. Nor is there any evidence that AEP Ohio has hedged against the risk of customers  
9 returning by, say, purchasing forward contracts in the market.

10 **Q. DR. MAKHIJA STATES THAT THE COST OF POLR RISK EQUALS THE**  
11 **DECREASE IN SHAREHOLDERS EQUITY STEMMING FROM THE**  
12 **INCREASED RISK PREMIUM THAT IS REQUIRED TO COMPENSATE AEP**  
13 **OHIO SHAREHOLDERS?<sup>168</sup> DO YOU AGREE?**

14 A. No. Dr. Makhija assumes that there is an actual cost to AEP for bearing this risk,  
15 and that AEP Ohio has not taken (and cannot take) any steps to hedge this risk.  
16 Moreover, this cost is clearly not the same as the option value to AEP Ohio consumers to  
17 return to SSO service, for the simple reason that the option value to consumers will  
18 depend on their perception of future market risk, whereas the equity premium cost will  
19 depend on AEP Co., Inc. shareholders’ view of AEP Ohio’s risk, how that risk affects the  
20 returns to AEP Co., Inc. in its entirety, and how that risk is itself hedged by shareholders  
21 as part of broader investment portfolios.

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<sup>167</sup> LaCasse Direct at 7:1-19.

<sup>168</sup> Makhija Direct at 3:16-20.

1 *g. AEP Ohio's Proposed POLR Charge is Anticompetitive*

2 **Q. MS. THOMAS STATES THAT THE POLR CHARGE DOES NOT PREVENT**  
3 **CUSTOMERS FROM SWITCHING.<sup>169</sup> DO YOU AGREE?**

4 A. Ms. Thomas is correct that the POLR charge does not prohibit customers from  
5 switching suppliers. However, AEP Ohio is clearly attempting to dissuade customers  
6 from doing so because, rather than basing a POLR charge on the costs the company bears  
7 by serving as the provider of last resort, AEP instead wishes to set the POLR charge so as  
8 to capture the entire value of switching to customers. In other words, by proposing to  
9 extract from consumers their entire value of switching, AEP Ohio disincentivizes customers to  
10 switch and forecloses competition. This is quite different than charging for the legitimate  
11 risks of serving as a provider of last resort.

12 **Q. CAN YOU PROVIDE A SIMPLE EXAMPLE?**

13 A. Yes. Suppose an industrial customer believes that a competitive electric supplier  
14 will charge \$10/MWh less than AEP Ohio for electricity. Let's further assume that there  
15 are no other nonbypassable charges, except for a POLR charge. In this example, the  
16 value of switching to the customer is \$10/MWh. Next, assume that, as the provider of  
17 last resort, AEP Ohio can insure itself for \$5/MWh by purchasing call options that it can  
18 exercise should customers return to SSO service. Setting the POLR charge to \$5/MWh  
19 compensates AEP Ohio for its known and measurable costs of taking on POLR risk. The  
20 customer switches to the competitive supplier and realizes \$5/MWh in price savings.  
21 From an economic standpoint, overall consumer well-being increases: the customer is  
22 better off and AEP Ohio is fully compensated for its costs.

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<sup>169</sup> *Id.* at 15:8.

1           If, instead, as AEP Ohio proposes to do here, the POLR charge is set to the full  
2           value to the customer of switching (\$10/MWh in this example), the customer no longer  
3           has any incentive to switch to the competitive electric supplier. AEP Ohio's profits  
4           increase, because it is paid twice the actual cost, thus transferring wealth from consumers  
5           to its shareholders.

6   **Q.   WHAT COSTS WILL THE POLR CHARGE RECOVER?**

7   A.           It is difficult to discern any costs AEP Ohio, in fact, incurs from the option to  
8           shop and return to the SSO. Indeed, because certain components of the ESP are not cost-  
9           based and other components double-recover costs, AEP Ohio cannot show that it will not  
10          recover through other riders any POLR costs it does incur.

11   **Q.   DO ANY OF THE AEP OHIO WITNESSES ESTIMATE THE COST TO AEP**  
12   **OHIO ASSOCIATED WITH CUSTOMERS RETURNING TO TAKE SERVICE**  
13   **FROM AEP OHIO?**

14   A.           No. The option model Ms. Thomas has used is designed to estimate the value of  
15          the option to switch to an individual customer, not the cost to AEP Ohio. Despite Ms.  
16          Thomas's testimony that "the POLR charge reflects the cost of providing a customer with  
17          switching options, not the cost of capacity and energy to serve the customer,"<sup>170</sup> neither  
18          she nor the other AEP Ohio witness provides any evidence whatsoever of the cost  
19          incurred by AEP Ohio when a customer switches back to SSO service.<sup>171</sup> Thus, the  
20          proposed POLR charge clearly fails the known and measurable test, which is necessary  
21          given that AEP Ohio is seeking approval of a cost-based rider.

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<sup>170</sup> *Id.* at 19:18-20.

<sup>171</sup> See Columbus Southern Power Company's and Ohio Power Company's Response to FES's 9th set INT-9-010 (attached as Exhibit JAL-25), where Ms. Thomas admits that AEP Ohio has not performed an analysis "of what it takes to keep units always ready to run whenever people come back").



1           **8. Conclusions Regarding AEP Ohio's Proposed Riders**

2   **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING AEP OHIO'S**  
3   **VARIOUS PROPOSED RIDERS.**

4   A.           The proposed nonbypassable riders, as well as the GSR and RSR, are uniformly  
5           anti-competitive. They are designed to foreclose competition and make it impossible for  
6           competitive electric suppliers to compete for AEP Ohio customers. None of the proposed  
7           nonbypassable riders has any legitimate economic rationale, nor have AEP Ohio  
8           witnesses provided any, and none fall within the categories of nonbypassable cost  
9           recovery under R.C. 4928.143.

10           Competitive electric suppliers must bear the risks associated with future carbon  
11           regulations and other environmental regulations, the risks associated with premature  
12           closure of uneconomic generating facilities, the risk of recovery of generation investment  
13           costs, the risk of recovery of NERC-related generation compliance costs, and the risks  
14           associated with customers no longer taking service from them. Rather than bearing these  
15           same risks, AEP Ohio seeks to force all of its customers, including those who wish to  
16           take competitive electric service, to bear all of these costs, while it earns a rate of return  
17           on its investment that is commensurate with it taking on some of the risk. AEP Ohio is  
18           seeking to recover costs that are clearly anti-competitive, and costs that are, by its own  
19           admission, not known and measurable.<sup>172</sup> AEP Ohio attempts to hide collection of these  
20           revenues behind an aura of economic development and energy security, when the truth is  
21           far simpler: AEP Ohio's ESP will harm retail competition and result in AEP Ohio's  
22           customers paying higher electric prices to subsidize uneconomic generation. Those

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<sup>172</sup> As discussed in Mr. Schnitzer's testimony, this makes a comparison between the proposed ESP and the expected results of an MRO quite difficult.

1 higher electric prices, in turn, will destroy jobs, not create them, as I discuss in the next  
2 section.

3 **IV. AEP OHIO'S ESP WILL DESTROY OHIO JOBS, NOT CREATE THEM**

4 **Q. HOW IS THIS SECTION OF YOUR TESTIMONY ORGANIZED?**

5 A. In this section, I rebut claims by AEP Ohio that allowing it to recover all of its  
6 costs through nonbypassable charges will benefit the Ohio economy by preserving  
7 existing jobs and creating new ones. AEP Ohio is correct that allowing it to recover all of  
8 its costs, including as I discussed previously, recovering the same costs twice, may  
9 preserve AEP Ohio jobs. However, because AEP Ohio's nonbypassable generation  
10 riders are likely to result in uneconomic generation being maintained or built in Ohio, the  
11 ESP will cause the loss of thousands of Ohio jobs.

12 **Q. MR. HAMROCK CLAIMS THAT THE PROPOSED ESP WILL PRESERVE "A**  
13 **PATH TO SUSTAINED INVESTMENT AND LONGER-TERM PRICE**  
14 **CERTAINTY FOR AEP CUSTOMERS WHO NEED SUCH CERTAINTY TO**  
15 **COMPETE IN THE GLOBAL ECONOMY."**<sup>173</sup> **DO YOU AGREE?**

16 A. No. As I discuss below, AEP Ohio's ESP will effectively eliminate retail electric  
17 competition and competitive electric suppliers from AEP Ohio's service territory by  
18 significantly raising costs and promoting inefficient generation investment. As such, it  
19 will damage the Ohio economy and eliminate thousands of jobs. Mr. Hamrock's  
20 argument is that competition creates uncertainty and destroys jobs. This is simply wrong.  
21 Electric market competition enhances the Ohio economy by reducing electricity costs,  
22 which are a critical input for businesses and industry, especially in a state like Ohio with  
23 a heavy concentration of manufacturing. Also, it is at best misleading to characterize

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<sup>173</sup> Hamrock Letter at 2.

1 AEP Ohio's ESP as representing price certainty. For the reasons previously highlighted  
2 with respect to the many variable riders in the proposed ESP, the ESP price is anything  
3 but certain.

4 **Q. IS MR. HAMROCK CORRECT THAT THERE IS SIGNIFICANT**  
5 **REGULATORY UNCERTAINTY IN THE CURRENT ENVIRONMENT?**

6 A. Mr. Hamrock is partially correct. He states, "With growing uncertainty reflected  
7 in Federal and State policies regarding the future of coal, the potential for shale gas  
8 production in the region to cause a shift in market fundamentals, and the opportunity for  
9 customers to choose alternative suppliers, investment in Ohio is uniquely risky."<sup>174</sup> I  
10 agree there are uncertainties regarding the future of coal. However, these policies are  
11 clearly not unique to Ohio, but affect all utilities and competitive electric suppliers who  
12 own coal-fired power plants throughout the United States. As for a shift in "market  
13 fundamentals," business and industry, including regulated utilities, always have had to  
14 deal with shifts in "market fundamentals."

15 **Q. DOES AEP PROVIDE ANY EVIDENCE THAT ITS ESP WILL BENEFIT THE**  
16 **OHIO ECONOMY?**

17 A. No. For example, in response to discovery request IEU-Ohio INT-081 (attached  
18 as Exhibit JAL-26), regarding the potential economic and job creation benefits to  
19 Ohioans stemming from the proposed CCS plant in West Virginia, AEP Ohio witness  
20 Nelson states, "While the Company does not possess specific information with respect to  
21 jobs and economic benefits, the Mountaineer Plant's proximity to Ohio is likely to  
22 provide job opportunities and economic benefits to the state." Such a supposition with no  
23 supporting evidence hardly constitutes empirical evidence, and AEP Ohio's recent

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<sup>174</sup> Hamrock Letter at 1.

1 announcement that this project is “on hold” does not help AEP Ohio’s position.

2 Moreover, Mr. Nelson’s response completely ignores the adverse impacts on the Ohio  
3 economy and jobs because of the higher electric prices that all AEP Ohio customers,  
4 including those who purchase electricity from competitive electric suppliers, will pay as a  
5 result of having to fund the CCS plant.

6 **Q. MR. HAMROCK STATES IN HIS LETTER TO THE COMMISSION THAT A**  
7 **REGULATORY FRAMEWORK “BIASED TOWARD CURRENT SHORT-TERM**  
8 **MARKET MECHANISMS” WILL LEAD TO CLOSURE OF AEP OHIO’S**  
9 **GENERATING ASSETS AND THE LOSS OF OHIO JOBS. DO YOU AGREE?**

10 A. No. Mr. Hamrock’s assertion that a regulatory framework based on competition  
11 is somehow “biased toward current short-term market mechanisms” makes no economic  
12 sense. First, competitive generation suppliers invest in new generating assets, which  
13 have decades-long lives. It makes no economic sense for such entities to develop a  
14 generating resource it expects to operate for (say) 30 years based solely on short-term  
15 forward prices in electric markets. Second, AEP’s decision to retire uneconomic coal-  
16 fired power plants and replace them with lower-cost natural gas-fired combined-cycle  
17 generating plants is driven by long-term economic trends and federal environmental  
18 policy, not by Ohio’s regulatory framework.<sup>175</sup> Third, Mr. Hamrock completely ignores  
19 generation investment in Ohio by competitive electric suppliers that, unlike AEP Ohio,

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<sup>175</sup> For example, page 5 of a May 5, 2011 presentation to the MIT Center for Energy & Environmental Policy Research Workshop by Bruce Braine, AEP Vice President, Strategic Policy Analysis (attached as Exhibit JAL-27) reports that AEP expects to retire between 5,000 and 7,000 MW of generating capacity by 2014-15, because of federal environmental regulations. That same page reports that new combined-cycle units have far lower capital and O&M costs. The presentation is available here: <http://web.mit.edu/ceepr/www/about/May2011/workshop%20agenda.html>.

And, given the unprecedented discoveries of shale gas, the Energy Information Administration’s most recent *Annual Energy Outlook* has further lowered its forecast of natural gas prices, and now projects wellhead prices below \$4.50/MMBtu (2009\$) as far out as the year 2020. The EIA forecast can be downloaded at: <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2011&subject=0-AEO2011&table=1-AEO2011&region=0-0&cases=ref2011-d020911a>.

1 have a strong economic incentive to operate their plants as efficiently as possible and  
2 provide the lowest possible cost electricity over the long-term. In fact, Mr. Hamrock  
3 recognized the benefits of competitive markets when he admitted that, if the Commission  
4 does not grant AEP Ohio's requests for recovery, AEP Ohio will "better match the risks  
5 and rewards of making long-term generation investments" by taking its generation assets  
6 to market.<sup>176</sup> The Commission should accept Mr. Hamrock's offer.

7 **Q. WHAT ABOUT AEP OHIO'S CLAIM THAT 300 PERMANENT JOBS WILL**  
8 **RESULT FROM THE TURNING POINT SOLAR PROJECT?**

9 A. The claimed jobs are anticipated to result from the construction of a new  
10 manufacturing plant by Isofoton near Toledo (not from the TPS project itself). Isofoton  
11 already has selected a facility in Napoleon, Ohio, and has received \$15.8 million in grants  
12 and incentives from the state. It has stated that one impetus for locating near Toledo was  
13 a 2010 study prepared by the State of Oregon concluding that the Toledo area has the  
14 overall lowest costs for operating a solar-panel plant compared with ten other states with  
15 solar-panel production. Thus, these manufacturing jobs are not directly dependent upon  
16 AEP Ohio's recovering the costs of the TPS project through a nonbypassable GRR.

17 **Q. IN DISCUSSING THE NEW JOBS THE TPS PROJECT WILL CREATE, DOES**  
18 **AEP OHIO WITNESS GODFREY EVER DISCUSS THE ADVERSE IMPACTS**  
19 **THAT THE PROPOSED ESP WILL HAVE ON THE OHIO ECONOMY?**

20 A. No. Instead, as I discuss below, the cumulative impacts of AEP Ohio's proposed  
21 nonbypassable riders that support uneconomic generation investment are likely to lead to  
22 job losses in the thousands.

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<sup>176</sup> Hamrock Testimony at 19:13-15.

1 **Q. DO YOU OPPOSE ISOFOTON'S DECISION TO LOCATE IN OHIO AND**  
2 **CREATE NEW MANUFACTURING JOBS IN OHIO?**

3 A. Of course not. What I oppose is AEP Ohio's proposal to use a nonbypassable  
4 rider to force all customers, including customers who purchase electricity from  
5 competitive retail electric suppliers, to subsidize such job creation, foreclose market  
6 competition, and subsidize AEP Ohio's generation investments under the ruse that, only  
7 through such subsidies will Ohio attract new jobs. AEP Ohio's position simply is untrue.

8 **Q. CAN THE TPS PROJECT GO FORWARD EVEN WITHOUT THE PROMISED**  
9 **JOB CREATION?**

10 A. Yes. The Participation Agreement ("PA") between Turning Point Solar, LLC and  
11 AEP Ohio (Exhibit JFG-6), shows that AEP Ohio can waive any of the requirements  
12 under Article 6.1 of the PA, including the requirement that the TPS project lead to 300  
13 "permanent" new manufacturing jobs.

14 **Q. UNDER THE PARTICIPATION AGREEMENT, HOW LONG WOULD THE**  
15 **"PERMANENT" JOBS NEED TO REMAIN IN PLACE?**

16 A. The "permanent" jobs created do not have to be permanent in any sense of the  
17 word. In fact, the PA's definition of a "permanent" job is actually meaningless.  
18 Specifically, as set forth in Article 1.1 of the PA, a "permanent job"

19 means a new, permanent job at a manufacturing or assembly plant for any  
20 solar modules, solar racking systems, inverters, or other major solar  
21 facility Equipment that will be installed at the Facility under the Facility  
22 Contracts, and has been created by a company that, after the Effective  
23 Date, has either located, relocated, or increased permanent employment at  
24 an existing manufacturing or assembly plant located in the State of  
25 Ohio.<sup>177</sup>

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<sup>177</sup> *Id.* at 12.

1        Thus, not only does the PA circularly define a “permanent job” as a “permanent job,” but  
2        the definition neither requires any net increase in employment, nor requires construction  
3        of a new manufacturing facility. Thus, under the terms of the PA, Isofoton could layoff  
4        or relocate all of the “permanent” workers after completing construction of the solar  
5        modules required for the TPS project, yet the jobs it created would still be considered  
6        “permanent” by AEP Ohio under the terms of the PA.

7        **Q.    ARE YOU AWARE OF ANY CASES IN WHICH A SOLAR MANUFACTURER,**  
8        **HAVING RECEIVED INCENTIVE PAYMENTS TO LOCATE IN A STATE AND**  
9        **CREATE PERMANENT NEW MANUFACTURING JOBS HAS LAID OFF**  
10       **WORKERS?**

11      A.        Yes. For example, despite receiving \$43 million in taxpayer funds from the  
12      government of Massachusetts in 2008, Evergreen Solar closed its Devens, MA  
13      manufacturing facility, laid off 800 workers, and shifted production to China, opening a  
14      new factory in Wuhan, China in September 2010. Thus, AEP Ohio customers, including  
15      other businesses, could find themselves forced to subsidize “permanent” manufacturing  
16      jobs, only to see those jobs disappear entirely shortly thereafter.

17      **Q.    ARE THERE PUBLISHED STUDIES OF THE ECONOMIC COSTS OF**  
18      **SUBSIDIZING RENEWABLE GENERATION?**

19      A.        Yes. There are a number of published studies. One of the most recent is the Ohio  
20      EPS Study that is attached as Exhibit JAL-28. The study estimated that, by the year  
21      2025, the state’s alternative energy portfolio standard would cause ratepayers in the state  
22      to pay \$1.4 billion extra for electricity in that year and cause the loss of almost 9,800  
23      jobs, roughly 700 jobs for every \$100 million increase in electricity costs.

24                Several studies have examined the cost of renewable mandates in European  
25      countries. For example, a study published in Spain estimated that each green job created

1 in Spain's wind and solar industries led to the loss of over two jobs in the rest of the  
2 Spanish economy and a required spend of over one million Euros (\$1.4 million) for each  
3 wind industry job created.<sup>178</sup> A study conducted by researchers in Germany reached  
4 similar conclusions, finding that for each worker in Germany's solar PV industry, the  
5 subsidy averaged 175,000 Euros (\$250,000).<sup>179</sup>

6 **Q. ARE YOU AWARE OF OTHER STATE UTILITY COMMISSIONS THAT HAVE**  
7 **CONCLUDED THAT UNECONOMIC GENERATION INVESTMENTS**  
8 **DESTROY JOBS?**

9 A. Yes. In an April 2010 Order that rejected a proposed contract between Deepwater  
10 Wind and National Grid, the Rhode Island PUC stated:

11 It is basic economics to know that the more money a business spends on  
12 energy, whether it is renewable or fossil based, the less Rhode Island  
13 businesses can spend or invest, and the more likely existing jobs will be  
14 lost to pay for these higher costs.<sup>180</sup>

15 Yet, AEP Ohio is advocating precisely that its business and residential customers be  
16 forced to pay higher prices for uneconomic generation so as to create jobs. The Rhode  
17 Island PUC realized this was economic nonsense. Because Ohio has far more  
18 manufacturing industry and is more electric-intensive than Rhode Island, lower cost

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<sup>178</sup> G. Calzada et al., "Study of the Effects on Unemployment of Public Aid to Renewable Energy Sources," Universidad Rey Juan Carlos, March 2009, published at: PROCESOS DE MERCADO. Volumen VII, Número 1, Primavera 2010. Available at: <http://www.juandemariana.org/pdf/090327-employment-public-aid-renewable.pdf>.

<sup>179</sup> M. Frondel, N. Ritter and C. Vance, "Economic Impacts from the Promotion of Renewable Energies: The German Experience, Final Report," Rheinisch-Westfälisches Institut für Wirtschaftsforschung, October 2009. Available at: [http://www.instituteeforenergyresearch.org/germany/Germany\\_Study\\_-\\_FINAL.pdf](http://www.instituteeforenergyresearch.org/germany/Germany_Study_-_FINAL.pdf).

<sup>180</sup> *In Re: Review of New Shoreham Project Pursuant to R.I. Gen Laws § 39-26.1-7*, Docket No. 4111, Report and Order, April 2, 2010, at 82 (emph. added). The Rhode Island PUC's decision was effectively overridden by subsequent legislation, but the point still stands.



1 electricity produced by economically-sourced generation is even more important for the  
2 future economic well-being of Ohio.

3 **Q. MR. HAMROCK ARGUES THAT, BY APPROVING THE ESP, OHIO**  
4 **CUSTOMERS WILL BENEFIT FROM LOWER-COST ELECTRICITY**  
5 **BECAUSE OF REDUCED REGULATORY UNCERTAINTY. DO YOU AGREE?**

6 A. No. In his letter accompanying AEP Ohio's application, Mr. Hamrock states,  
7 "Under Market Rate Offers, the difference is perhaps only a more defined path to market  
8 prices, though likely ending ultimately with the same result for the State... a gradual loss  
9 of investment and jobs to surrounding states, and volatility for customers and  
10 investors."<sup>181</sup> This is simply untrue. First, Mr. Hamrock assumes, without any basis, that  
11 competitive generators will never invest in Ohio. That is clearly untrue, as discussed in  
12 the testimony of FES witness Banks. For example, the PJM generation queue lists a  
13 number of new generating facilities to be built in Ohio.<sup>182</sup> Second, he assumes that lower  
14 prices for generation, which are the hallmark of wholesale competition, will not help  
15 businesses and industries in Ohio. That is also clearly untrue. Instead, Mr. Hamrock  
16 assumes that, if AEP Ohio's old and expensive generators are not protected from  
17 competition by raising market barriers and foreclosing competitive generation suppliers  
18 from the Ohio market, then the entire state economy will suffer irreparable harm. This  
19 argument is contradicted by basic economic principles.

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<sup>181</sup> Hamrock Letter at 1.

<sup>182</sup> Available at: <http://www.pjm.com/planning/generation-interconnection/generation-queue-active.aspx>.

1 **Q. WILL AEP OHIO'S PROPOSED ESP RAISE ELECTRICITY COSTS?**

2 A. Yes. As Mr. Schnitzer testifies, AEP Ohio determines that its proposed ESP cost  
3 is below an MRO because the company underestimates and omits several cost categories,  
4 while overestimating the costs of procuring energy supplies, leading to an ESP that is  
5 more costly than would be achieved using market mechanisms.<sup>183</sup>

6 **Q. WHY WILL HIGHER GENERATION PRICES RESULTING FROM AEP**  
7 **OHIO'S UNECONOMIC INVESTMENTS CAUSE JOB LOSSES?**

8 A. The effects of AEP Ohio's uneconomic investments and nonbypassable riders will  
9 have widespread impacts on the Ohio economy, extending far beyond simply raising  
10 customers' monthly electric bills. For example, households forced to spend more money  
11 on subsidized generation will reduce their spending on other goods and services,  
12 affecting businesses that cater to those consumers. Similarly, businesses paying increased  
13 electric bills must either reduce their output, increase their prices, or both. These impacts  
14 will, in turn, lead to job loss, which will in turn further reduce consumer spending,  
15 causing even greater economic losses.

16 Because of the interconnections among industries, and between industries and  
17 households, a change in the price of just one good or service can cause ripple effects  
18 throughout the Ohio economy. Positive ripple effects add jobs and increase disposable  
19 income as more workers are hired, more equipment and supplies are purchased from  
20 other local businesses, more wages are paid to employees, and more taxes are paid to  
21 government entities. Conversely, negative ripple effects result in job loss and decreased  
22 disposable income. These impacts are called multiplier effects or multipliers. In other

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<sup>183</sup> Schnitzer Direct at 14-103.

1 words, the impacts of uneconomic generation investments would “ripple” through the  
2 entire Ohio economy, leading to job losses and reductions in economic output.

3 **Q. HOW CAN THE IMPACTS OF UNECONOMIC GENERATION INVESTMENTS**  
4 **ON THE OHIO ECONOMY AND ON JOBS BE EVALUATED?**

5 A. There are two general methods that are used to analyze economic impacts. The  
6 first method uses what is called a “computable general equilibrium” (“CGE”) modeling  
7 framework. This is the type of model used in the Ohio EPS Study previously attached as  
8 Exhibit JAL-28. The second method, which I have used to analyze the impact of AEP  
9 Ohio’s uneconomic investment in Ohio, is called an “input-output” (“I/O”) modeling  
10 framework.

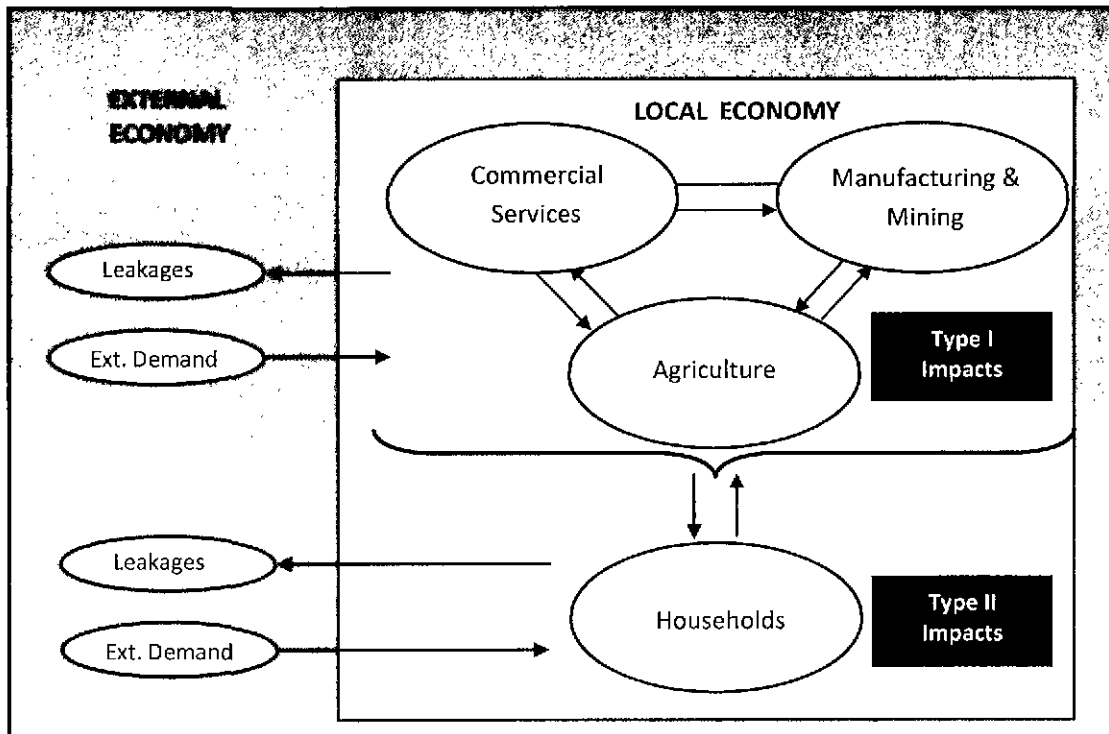
11 **Q. PLEASE EXPLAIN HOW AN I/O MODEL WORKS.**

12 A. Input-output analysis traces the interdependencies of an economy, specifically the  
13 sales and purchases of goods among all of the sectors of an economy.<sup>184</sup> For example,  
14 constructing a new high-voltage transmission line will require the purchase of concrete  
15 that will be used as foundations for transmission towers. But to manufacture that  
16 concrete, firms must purchase inputs including sand, gravel, and electricity. Similarly,  
17 transmission towers will be made of steel that is manufactured in steel mills that use iron  
18 ore, which is mined by other firms. Moreover, construction requires the use of many  
19 workers who then spend their wages on all varieties of goods and services. An input-  
20 output framework is designed to trace all of those relationships. Figure 2 shows the  
21 general analytical framework for an I/O model.

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<sup>184</sup> Nobel Prize winning economist Wassily Leontief is generally considered to be the “father” of Input-Output analysis. For an introduction to I/O modeling, see his treatise *Input-Output Economics*, 2<sup>nd</sup> Ed. (New York: Oxford University Press 1986).

Figure 2: I/O Model Structure



In an I/O model, a “local” economy, which can be a county, state, multi-county or multi-state region, etc., is broken down into manufacturing & mining, commercial services, and agriculture. There is also a household sector and, in some cases, a separate government sector. Purchases outside the local economy are considered “leakages.” On the other hand, sales by business and industry of goods and services to outside the local economy are treated as external demand. External demand increases the level of economic activity within the local economy.

There are also household impacts. Households in the local economy purchase goods and services from local industries, as well as from the broader external economy. Moreover, external households purchase goods and services from firms within the local economy. If household impacts on the economies (e.g., the wages households earn that are spent on goods and services), are excluded from the economy, the resulting economic

1 impacts are called "Type I impacts." If households are included, the resulting economic  
2 impacts are called "Type II impacts." For each sector of the economy modeled, the I/O  
3 model also traces employment and wages. Thus, concrete manufacturing within the local  
4 economy may require an average of, say, 10 employees for every million dollars of  
5 concrete produced, while grocery stores may employ 30 people for every million dollars  
6 of retail sales. Type II impacts include changes in household spending that result from  
7 policy changes, such as changes in income tax rates, as well as how changes in industrial  
8 output affect wages paid and expenditures households make on goods and services.

9 **Q. PLEASE EXPLAIN HOW YOU ESTIMATE IMPACT OF AEP OHIO'S**  
10 **UNECONOMIC INVESTMENTS.**

11 A. To perform this analysis, I have used one of the most well-known economic  
12 impact models, the **IM**Impact for **PLAN**ning ("IMPLAN") model.<sup>185</sup> IMPLAN is the most  
13 well-known and widely used I/O model and is used by numerous government agencies at  
14 both the federal and state levels, including the Ohio Department of Development.

15 **Q. PLEASE EXPLAIN HOW IMPLAN WORKS.**

16 A. The IMPLAN model begins with the most current national transactions matrix  
17 developed by the current National Bureau of Economic Analysis Benchmark Input-  
18 Output Model. The model breaks down the U.S. economy into over 500 separate  
19 economic sectors in agriculture, manufacturing, commercial services, and government.

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<sup>185</sup> IMPLAN was first developed in the late 1970s by the U.S. Forest service to analyze the economic impacts of different forestry policies. The current version of IMPLAN is maintained by MIG Inc., formerly known as the Minnesota IMPLAN group. MIG was founded in 1993 by Scott Lindall and Doug Olson as an outgrowth of their work at the University of Minnesota, which began in 1984. This developmental work closely involved the U.S. Forest Service's Land Management Planning Unit in Fort Collins, and Dr. Wilbur Maki at the University of Minnesota.

1 Next, the model creates state and county-level values by adjusting the national level data,  
2 such as removing industries that are not present in a particular state or economy.

3 The model also estimates imports and exports using what are called regional  
4 purchase coefficients (“RPCs”). A RPC measures the proportion of the total supply of a  
5 commodity or service required to meet a particular industry’s intermediate demands and  
6 final demands that are produced locally. The larger the RPC value, the greater the  
7 percentage of total regional demand that is met through local supplies, and the fewer  
8 expenditures that “leak out” of the local economy. The larger the local economy, e.g., an  
9 entire state rather than an individual county within a state, the larger will be the RPC  
10 values. RPCs are important for estimating the economic impacts of higher electricity  
11 prices, because the larger the leakages out of the Ohio economy, the less the overall  
12 impacts will be in the state.

13 One of the key features of IMPLAN (and all I/O models) is the calculation of  
14 “multipliers.” Multipliers capture how the impacts of a policy change ripple through the  
15 local economy. For example, suppose electric prices in the state increase by \$100 million  
16 because of a lack of retail electric competition and AEP Ohio’s imposition of numerous  
17 nonbypassable riders. In that case, collectively, businesses and individuals will spend  
18 \$100 million more on electricity and have \$100 million less to spend on all other goods  
19 and services.

20 A business that is compelled to pay for AEP Ohio’s uneconomic investment  
21 through a nonbypassable rider would likely reduce its output, increase the price of the  
22 goods and services it sells, or both. An electric-intensive business might even decide to  
23 relocate out-of-state; for example, aluminum smelting companies left the Pacific

1 Northwest after their electric rates were increased and relocated to other countries  
2 offering lower price electricity. If the business reduced its production, it would purchase  
3 fewer supplies from other businesses, which, in turn, would respond to decreased demand  
4 for the goods and services they produce by purchasing fewer supplies from other  
5 businesses, and so forth. And, of course, all of those other businesses would also pay  
6 more for electricity. In other words, the impacts of uneconomic generation investments  
7 would ripple through the Ohio economy.

8 If the impacts on households were also considered, the multiplier would increase.  
9 Not only would businesses reduce their output because of the costs of uneconomic  
10 generation investments, but households would have less disposable income. Moreover,  
11 job losses at businesses affected by the costs of uneconomic generation investments  
12 would reduce wage payments, thereby reducing overall household income. Reduced  
13 wages would also mean that state and local governments would collect fewer tax  
14 revenues, causing them to reduce expenditures. The resulting Type II impacts on the  
15 Ohio economy, therefore, would be even greater.<sup>186</sup>

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<sup>186</sup> In addition to calculating standard Type I and Type II multipliers, IMPLAN can also calculate what are called “SAM multipliers.” SAM stands for “Social Accounts Matrix,” and is a more detailed breakdown of transactions within an economy. Specifically, whereas the typical input-output framework captures production and consumption, it leaves out some income transactions, such as taxes, savings, and transfer payments. IMPLAN allows users to capture these components as well, and thus derive what are called SAM multipliers. SAM multipliers are a form of Type II multiplier. Thus, SAM multipliers incorporate direct, indirect, and induced impacts, while accounting for the effects of savings, taxes, and transfer payments. Exhibit JAL-29 provides a mathematical description of an I/O model, including how multipliers are estimated.

1 **Q. PLEASE EXPLAIN HOW YOU ESTIMATED THE IMPACTS ON**  
2 **EMPLOYMENT IN OHIO RESULTING FROM AEP OHIO'S UNECONOMIC**  
3 **INVESTMENTS.**

4 A. To model the economic impacts of uneconomic generation investments on the  
5 Ohio economy, I assumed that businesses and consumers would reduce their purchases of  
6 other goods and services by an equivalent amount, i.e., an individual household forced to  
7 spend \$100 more on electricity would consequently spend \$100 less on all other goods  
8 and services. I also assumed that households would continue to purchase the same  
9 proportions of those other goods and services. For example, if an individual had  
10 previously spent \$200 annually on haircuts and three times as much, or \$600, annually on  
11 clothes, I assumed he would continue to spend three times more for clothes as haircuts,  
12 but at lower levels, e.g., \$190 on haircuts and \$570 (3 x \$190) on clothes. Similarly,  
13 businesses paying more for electricity would reduce purchases of all of the other inputs  
14 they used to produce their goods and services by the same percentages, thus maintaining  
15 the same relative proportions of each.<sup>187</sup>

16 Next, I derived an overall employment multiplier for the Ohio economy, equal to  
17 the weighted average of the individual sector employment multipliers, excluding the  
18 electricity sector.<sup>188</sup> I then estimated an overall weighted average RPC value. That is, I  
19 determined the fraction of total expenditures that, on average, businesses and individuals

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<sup>187</sup> The Leontief input-output framework assumes what are called "fixed production coefficients." This means that firms cannot substitute inputs, e.g., using more natural gas instead and less electricity, to produce the same output. The production coefficients are called "technical coefficients" in the I/O modeling framework. Although this assumption does not hold in the long-run, it is reasonable for short-run impact studies. See Exhibit JAL-29 for a discussion of how this analysis was performed.

<sup>188</sup> In IMPLAN, Sector 31 is "Electric power generation, transmission, and distribution."



1 spend at Ohio firms.<sup>189</sup> Next, I estimated the weighted average number of jobs per  
2 millions of dollars of output for all industries in the state. Then, I estimated a weighted  
3 average value for jobs per million\$ of output in the Ohio economy. Finally, using the  
4 overall RPC value, the weighted average job multiplier, and the weighted average jobs  
5 per million\$ of output, I was able to calculate the total job impacts of per million\$ of  
6 increased generation costs in the state.

7 **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSIS.**

8 A. Using the IMPLAN model for Ohio and the methodology set forth in Exhibit  
9 JAL-29, I calculated that, for each million dollar increase in uneconomic generation costs  
10 paid by Ohio businesses and residential customers, almost 13 jobs would be lost in the  
11 Ohio economy. Thus, \$100 million spent on uneconomic generation would cause the  
12 loss of 1,293 jobs.

13 **Q. HOW DO YOUR RESULTS COMPARE WITH THE RESULTS OF THE OHIO**  
14 **EPS STUDY PREVIOUSLY ATTACHED AS EXHIBIT JAL-28?**

15 A. As I discussed previously, the Ohio EPS study showed that, by the year 2025, the  
16 average job loss would be about 700 per \$100 million increase in electric costs. This  
17 value is lower than my estimate because the EPS study is dynamic and allows consumers  
18 and businesses to adjust their behavior over time in response to higher generation prices.  
19 Of course, such adjustments do not take place instantaneously. Therefore, in the near  
20 term, the impacts of higher costs related to uneconomic generation investments will tend  
21 to be larger than in the year 2025.

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<sup>189</sup> It is also important to remember that a percentage of the wages individual employees are paid is transferred as payroll taxes. The assumed overall payroll tax rate is 15%, which includes both Social Security and Medicare.

1 **Q. HOW DO THESE ESTIMATED JOB LOSSES COMPARE WITH THE JOB**  
2 **INCREASES FROM AEP OHIO PROPOSED INVESTMENTS, SUCH AS**  
3 **“GENERIC” SOLAR ACQUISITIONS?**

4 A. According to AEP Ohio’s analysis, in the year 2015, “generic” solar energy  
5 acquisitions (excluding the TPS facility) will increase the annual revenue requirement for  
6 CSP and OPC combined by \$24.3 million over what it would be without such  
7 acquisitions.<sup>190</sup> The higher revenue requirement from these uneconomic investments  
8 would result in the loss of between 162 and 281 jobs, using the Ohio EPS study job loss  
9 estimate and my IMPLAN model estimate, respectively. This by itself would largely  
10 offset the claimed “permanent” jobs associated with the TPS project.

11 **Q. CAN YOU ESTIMATE THE JOB IMPACTS OF ALL OF AEP OHIO’S**  
12 **PROPOSED NONBYPASSABLE GENERATION RIDERS?**

13 A. Not entirely. As I discussed in Section III of my testimony, AEP Ohio has  
14 admitted that the revenue requirements for two of its proposed nonbypassable generation  
15 riders are neither known nor measurable: (1) the FCCR, which will be used to fund  
16 generation facility closure costs; and (2) the NERCR, which will fund generation  
17 investments required for reliability purposes. Because AEP Ohio has provided no  
18 revenue requirement estimates for these riders, I have not estimated the job losses they  
19 will cause, other than to note that as the riders will support uneconomic investments they  
20 too will lead to job losses in the state. I can, however, calculate job losses caused by  
21 AEP Ohio’s other nonbypassable riders. As detailed below in Table 10, these three riders  
22 alone would cause the loss of over 3,400 jobs per year in Ohio.

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<sup>190</sup> Source: AEP workpapers. I deflate the \$24.3 million figure in 2015 into \$21.7 million 2009\$.

**Table 10: Annual Revenue Requirement and Estimated Job Losses  
Due to Selected Nonbypassable Riders**

Line No.	Nonbypassable Rider	AEP Ohio Estimated Annual Revenue Requirement (Millions of \$)	AEP Ohio Estimated Annual Revenue Requirement (Millions of 2009\$)	Predicted Annual Job Losses
		\$1.6 (study)	\$1.54	20
[1]	CCR	\$46.1 (constr. + O&M, 2015)	\$42.11	545
[2]	GRR	\$10.57, avg. 2013-2014	\$9.66	125
[3]	FCCR	Unknown	--	--
[4]	EICCR	\$93.1, avg. 2012-2014	\$89.80	1,161
[5]	NERCR	Unknown	--	--
[6]	POLR	123.55, 2012	\$119.17	1,541
[7]	<b>Total</b>	<b>\$278.51</b>	<b>\$262.27</b>	<b>3,392</b>

Notes:

[1] Source: Nelson Direct, p. 21. AEP Ohio has announced that the Mountaineer project is "on hold" but has not amended its testimony to remove the CCR rider from its ESP.

[2] Source: Supplemental Exhibit PJN-4, p.2

[4] Source: Moore Exhibit AEM-1, p. 1

[6] Source: Roush Workpapers, 2012 POLR charge

**Q. WILL AEP OHIO'S ESP BENEFIT OHIO CONSUMERS AND BUSINESSES?**

A. No. As shown in Table 13, I estimate that the proposed ESP will cause the loss of almost 3,400 jobs annually, just from the nonbypassable riders for which AEP Ohio has provided cost estimates. I conclude that the only beneficiary of the proposed ESP is AEP Ohio because, if the proposed ESP is approved, the company will transfer all of the risk associated with its generating plant investments to ratepayers. Moreover, because the proposed ESP would foreclose competition in Ohio and allow AEP Ohio to retain its monopoly status, those ratepayers would have no choice but to bear all of AEP Ohio's generating plant risks. Such an outcome is unreasonable and unfair to Ohio consumers.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes, it does.

## CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing *Direct Testimony of Jonathan A. Lesser* was served this 25th day of July, 2011, via e-mail upon the parties below.



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