

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of )  
Ohio Power Company for Authority to ) Case No. 23-23-EL-SSO  
Establish a Standard Service Offer )  
Pursuant to Section 4928.143, Revised )  
Code, in the Form of an Electric Security )  
Plan )

In the Matter of the Application of Energy )  
Ohio Power Company for Approval of ) Case No. 23-24-EL-AAM  
Certain Accounting Authority )

**DIRECT TESTIMONY  
OF  
JAMES F. WILSON**

**On Behalf of**  
**Office of the Ohio Consumers' Counsel**  
*65 East State Street, Suite 700*  
*Columbus, Ohio 43215*

**June 9, 2023**

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## **LIST OF ATTACHMENTS**

Attachment JFW-1

1    **I.       INTRODUCTION**

2

3    ***Q1.    PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.***

4    ***A1.***    My name is James F. Wilson. I am an economist and principal of Wilson Energy  
5            Economics. My business address is 4800 Hampden Lane Suite 200, Bethesda,  
6            MD 20814.

7

8    ***Q2.    PLEASE DESCRIBE YOUR EXPERIENCE AND QUALIFICATIONS.***

9    ***A2.***    I have over thirty-five years of consulting experience in the electric power and  
10           natural gas industries. Many of my past assignments have focused on the  
11           economic and policy issues arising from the introduction of competition into these  
12           industries, including restructuring policies, market design, and market power.  
13           Other engagements have included contract litigation and damages; pipeline rate  
14           cases; forecasting and market assessment; evaluating allegations of market  
15           manipulation; probabilistic modeling of utility planning problems; and a wide  
16           range of other issues arising in these industries. I also spent five years in Russia in  
17           the early 1990s advising on the reform, restructuring, and development of the  
18           Russian electricity and natural gas industries for the World Bank and other  
19           clients. I have submitted affidavits and presented testimony in proceedings of the  
20           Federal Energy Regulatory Commission (“FERC”), state regulatory agencies, and  
21           a U.S. district court.

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1 I have been involved in electricity restructuring and wholesale market design for  
2 over twenty years in the Mid-Atlantic (PJM) region, New England, Ontario,  
3 California, Russia, and other regions. With regard to the PJM system, I have been  
4 involved in a broad range of market design, planning, load forecasting, and  
5 capacity market issues over many years. I have a B.A. in Mathematics from  
6 Oberlin College and an M.S. in Engineering-Economic Systems from Stanford  
7 University. My curriculum vitae, summarizing my experience and listing past  
8 testimony, is Attachment JFW-1 attached hereto.

9

10 ***Q3. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES***  
11 ***COMMISSION OF OHIO (“PUCO”)?***

12 ***A3.*** Yes. I testified in Case No. 22-900-EL-SSO (the application of The Dayton Power  
13 and Light Company for Approval of Its Electric Security Plan), Case No. 17-  
14 0032-EL-AIR (the application of Duke Energy Ohio, Inc., for an increase in  
15 electric distribution rates), Case No. 14-1693-EL-RDR (the application of Ohio  
16 Power Company for approval to enter into an Affiliate Power Purchase  
17 Agreement); Case No. 14-1297-EL-SSO (the application of Ohio Edison  
18 Company, The Cleveland Electric Illuminating Company and The Toledo Edison  
19 Company for approval of an Electric Security Plan); Case No. 14-841-EL-SSO  
20 (the application of Duke Energy Ohio for approval of an Electric Security Plan);  
21 Case No. 13-2385-EL-SSO (the application of Ohio Power Company for approval  
22 of an Electric Security Plan); Case No. 12-426-EL-SSO (the application of The  
23 Dayton Power and Light Company for approval of a Market Rate Offer); Case

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1 No. 12-1230-EL-SSO (the application of Ohio Edison Company, The Cleveland  
2 Electric Illuminating Company, and The Toledo Edison Company for approval of  
3 an Electric Security Plan); and Case No. 09-906-EL-SSO (the application of Ohio  
4 Edison Company, The Cleveland Electric Illuminating Company, and The Toledo  
5 Edison Company for approval of a Market Rate Offer).

6

7 ***Q4. WHAT IS THE PURPOSE AND SCOPE OF YOUR TESTIMONY?***

8 ***A4.*** In Case No. 23-23-EL-SSO, et al. Ohio Power Company (“AEP Ohio” or “the  
9 Company”) has proposed a new electric security plan (“ESP”) for the period June  
10 1, 2024 through May 31, 2030.

11

12 In light of the results of recent standard service offer (“SSO”) auctions that have  
13 led to sharply higher prices and costs to SSO customers, stakeholders and the  
14 PUCO have expressed interest in the consideration of changes to the structure  
15 and/or rules of the SSO auctions in the interest of achieving more efficient and  
16 lower-cost SSO auction results. In this regard, the Company has proposed a new  
17 Government Aggregation Standby Rider supported by Company witnesses Jaime  
18 L. Mayhan and Michael W. McCulty.

19

20 My assignment was to review the Company’s application; the history of the SSO  
21 auctions (with a focus on the recent auctions that have raised issues and  
22 concerns); the practices in other states; and the discussion among stakeholders  
23 and with the PUCO of possible changes to the SSO auction structure and rules,

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1 and then to provide analysis and recommendations with regard to whether the  
2 Company's proposed changes to the SSO auctions are likely to be sufficient to  
3 achieve efficient and low cost SSO auction outcomes for customers. More  
4 broadly, I was asked to address the following questions:

- 5 1. Are there other SSO rule changes, for instance introducing restrictions on  
6 customers switching into and out of SSO service, or rules placing limits on  
7 the quantities SSO suppliers are obligated to serve at SSO prices when  
8 there are large customer inflows or outflows, that could lead to more  
9 efficient auction outcomes and lower costs for residential consumers?
- 10 2. Would it be more efficient and lead to better SSO auction outcomes to  
11 separate the SSO auctions for residential consumers, or perhaps for  
12 residential and small commercial consumers, from the SSO auctions for  
13 other (industrial and commercial) customers?

14  
15 While I understand the scope of this proceeding is limited to AEP Ohio's ESP,  
16 some stakeholders have expressed preference for common approaches to the SSO  
17 service and auctions for all of the Ohio utilities. Therefore, my discussion of these  
18 issues is not narrowly focused on AEP Ohio.

19  
20 ***Q5. HASN'T THE COMMISSION OPENED SEPARATE DOCKETS TO***  
21 ***ADDRESS POSSIBLE CHANGES TO SSO AUCTION RULES?***

22 ***A5.*** Yes. In September 2022 the PUCO directed the Ohio electric utilities to propose  
23 minimum stay language for their tariffs, and the utilities' applications were

1 approved in a Finding and Order dated March 8, 2023 (Case No. 22-1140-EL-  
2 ATA, et al.) And by an entry dated January 3, 2023 the Commission opened Case  
3 No. 17-2391-EL-UNC et al to discuss two possible SSO auction modifications:  
4 six-month products, and revised credit requirements. The scope of these dockets  
5 is very narrow, while the scope of the potential changes to SSO auction structure  
6 and rules that stakeholders are considering is, and in my opinion needs to be,  
7 much broader.

8

9 **II. SUMMARY AND RECOMMENDATIONS**

10

11 ***Q6. WHY ARE STAKEHOLDERS AND THE COMMISSION DISCUSSING***  
12 ***CHANGES TO THE SSO RULES AT THIS TIME?***

13 ***A6.*** Recent SSO auctions have led to very high prices, high on an absolute basis and  
14 relative to forward prices. These results reflect recent events that may have  
15 substantially increased potential SSO suppliers' perception of the risk associated  
16 with providing SSO service, leading to higher offer prices in the recent SSO  
17 auctions.

18

19 ***Q7. WHAT TYPES OF CHANGES HAVE BEEN DISCUSSED?***

20 ***A7.*** Three main types of changes can be identified: 1) placing limits on customers'  
21 rights to switch into and out of SSO; 2) placing limits on SSO suppliers' sales  
22 obligations at the SSO auction price when there are large inflows into SSO; and 3)

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1 holding separate SSO auctions by customer class. Various other changes have  
2 also been discussed; however, my testimony will focus on these three types.

3

4 **Q8. DOES AEP OHIO'S APPLICATION INCLUDE ANY CHANGES TO THE**  
5 **APPROACH TAKEN FOR THE COMPANY'S SSO AUCTIONS FOR THIS**  
6 **ESP?**

7 **A8.** No. While the Company has proposed a Government Aggregation Standby Rider  
8 that could in the future be used to introduce a standby service charge (discussed in  
9 detail later in my testimony), the Company has not proposed any rules to make  
10 use of this rider at this time.

11

12 **Q9. IS AEP OHIO'S PROPOSED APPROACH TO THE SSO AUCTIONS**  
13 **LIKELY TO ADEQUATELY MITIGATE SUPPLIER RISK AND LEAD TO**  
14 **EFFICIENT AND LOW COST SSO AUCTION OUTCOMES FOR**  
15 **CUSTOMERS?**

16  
17 **A9.** No, I do not believe the approach will achieve efficient auction outcomes. Even if  
18 the envisioned Standby Service is implemented, other changes discussed in my  
19 testimony – especially separate auctions for residential customers, and limits on  
20 supplier quantity risk – are likely needed.

21

22 **Q10. PLEASE PROVIDE YOUR OPINION WITH REGARD TO POSSIBLE**  
23 **RULES ABOUT CUSTOMERS SWITCHING INTO AND OUT OF SSO**  
24 **SERVICE.**

25 **A10.** While such rules do help to limit the quantity risk faced by SSO suppliers, they do  
26 not go very far in limiting this risk. And limiting customers' freedom to switch is  
27 contrary to the spirit of retail competition and could reduce the competitiveness of



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1 the market, so such rules should not go too far, and should continue to afford  
2 customers considerable flexibility to choose. To achieve efficient SSO auction  
3 results, some limits on switching may be helpful but more is likely needed to  
4 achieve efficient auction outcomes.

5

6 ***Q11. PLEASE PROVIDE YOUR OPINION WITH REGARD TO POSSIBLE***  
7 ***RULES PLACING LIMITS ON THE QUANTITIES SSO SUPPLIERS ARE***  
8 ***OBLIGATED TO SERVE AT SSO PRICES WHEN THERE ARE LARGE***  
9 ***CUSTOMER INFLOWS OR OUTFLOWS.***

10 ***A11.*** Rules limiting the quantities SSO suppliers are obligated to serve could be  
11 effective in limiting the perceived risk associated with large inflows to SSO  
12 service. However, the details of such rules could become complicated and  
13 controversial, in particular the details of which SSO customers would end up  
14 paying higher prices when the rules take effect and an SSO supplier is obtaining  
15 some supplies at market prices.

16

17 ***Q12. PLEASE PROVIDE YOUR OPINION WITH REGARD TO THE “STANDBY***  
18 ***SERVICE” ENVISIONED IN THE PROPOSED GOVERNMENT***  
19 ***AGGREGATION STANDBY RIDER.***

20 ***A12.*** While the “Standby Service” concept seems a reasonable approach to addressing  
21 the risk posed by large aggregators, it does not address the risk associated with  
22 large inflows to SSO by commercial and industrial customers. As I will show in  
23 my testimony, AEP Ohio has seen large inflows to SSO from commercial and  
24 industrial customers recently, not from aggregators.

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1   ***Q13. PLEASE PROVIDE YOUR OPINION WITH REGARD TO HOLDING***  
2   ***SEPARATE SSO AUCTIONS FOR RESIDENTIAL CONSUMERS.***

3   ***A13.*** Holding separate SSO auctions for residential customers, or perhaps residential  
4           and small commercial customers, an approach many other states have adopted,  
5           has the potential to significantly mitigate the perceived risk of SSO service, and  
6           could lead to more efficient and lower cost SSO auction outcomes for customers.  
7           SSO suppliers are likely to find smaller customers less likely to switch into and  
8           out of SSO service and, therefore, less risky to serve.

9

10   ***Q14. DO OTHER RETAIL ACCESS STATES SEPARATE THE STANDARD***  
11   ***OFFER SERVICE AUCTIONS BY CUSTOMER CLASS?***

12   ***A14.*** Yes, as I will explain, many other retail access states have followed this approach  
13           to standard offer service pricing for many years.

14

15   ***Q15. PLEASE SUMMARIZE YOUR RECOMMENDATION WITH REGARD TO***  
16   ***SEPARATE AUCTIONS BY CUSTOMER CLASS.***

17   ***A15.*** I recommend that the PUCO require the Company to implement separate SSO  
18           auctions for residential customers, perhaps also including small commercial  
19           customers.

20

21   ***Q16. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY***  
22   ***ORGANIZED?***

23   ***A16.*** The next section reviews recent SSO auction prices and discusses the  
24           circumstances that have caused the prices in recent SSO auctions to be high  
25           relative to forward prices. Section IV addresses possible provisions to limit

1 customers' freedom to switch into and out of SSO. Section V discusses rules that  
2 would limit SSO suppliers' quantity sales obligations when there are large inflows  
3 into SSO. Section VI discusses the possibility of holding different SSO auctions  
4 by customer class.

5

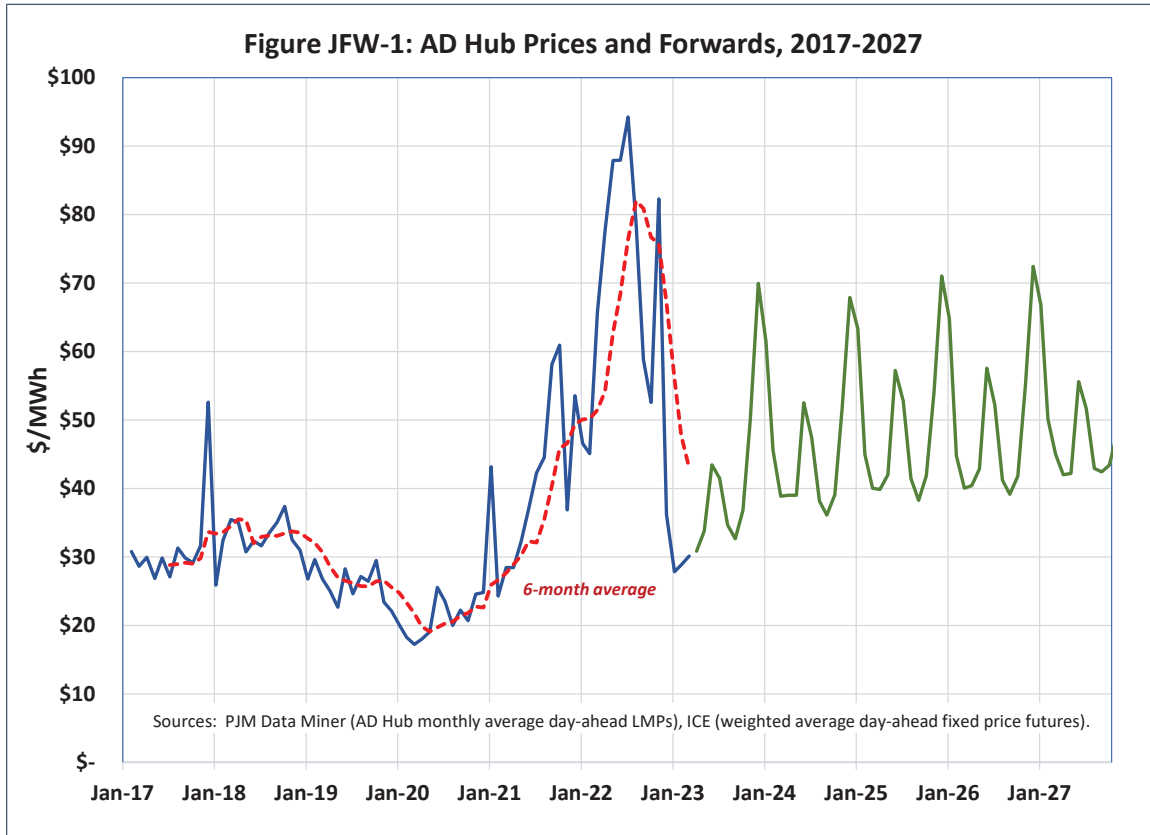
6 **III. RECENT ENERGY PRICES AND SSO AUCTION OUTCOMES**

7

8 ***Q17. PLEASE SUMMARIZE RECENT ENERGY PRICES IN OHIO.***

9 ***A17.*** Figure JFW-1 shows the average monthly day-ahead locational marginal prices  
10 (“DA LMP”) for 2017 through early 2023, for the AEP – Dayton wholesale  
11 electricity pricing hub (“AD Hub”) that is generally used as a benchmark price for  
12 much of Ohio. These prices had been quite stable at around \$30/MWh (and going  
13 further back would show additional years of stable prices at modest levels), but  
14 then rose sharply in mid-2021 and into 2022 to more than double the prior levels.  
15 Recent months have seen prices closer to historical levels.

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1 Natural gas and energy prices increased sharply in 2021 in Europe due to a  
2 combination of factors; then in February 2022 the war in Ukraine further raised  
3 energy prices. These increases were felt at the Henry Hub natural gas pricing  
4 point because the U.S. is a major supplier of liquefied natural gas to the world,  
5 and in the Marcellus-Utica natural gas production region, from which much of the  
6 natural gas for export originates. These upward price pressures were also felt at  
7 the AD Hub, as reflected in Figure JFW-1.

1 **Q18. PLEASE SUMMARIZE CURRENT EXPECTATIONS FOR FUTURE**  
2 **ENERGY PRICES IN OHIO.**

3  
4 **A18.** Figure JFW-1 also shows weighted average forward prices for the same AEP –  
5 Dayton hub, which vary seasonally over the coming years in the \$40 to \$70/MWh  
6 range. Thus, the market expects energy prices to be considerably higher going  
7 forward than they were over 2017 to 2020 before the increases in 2021.

8  
9 **Q19. PLEASE DISCUSS RECENT SSO AUCTION PRICE OUTCOMES.**

10 **A19.** As is well known, SSO auction prices have risen sharply recently, primarily as a  
11 result of the increases in current and expected future energy prices. With my focus  
12 on the efficiency of the SSO auctions, I focus not on the absolute level of SSO  
13 auction prices, but on the level of those prices relative to contemporaneous energy  
14 futures prices (the forward curve).

15  
16 **Q20. PLEASE EXPLAIN WHY YOU FOCUS ON AUCTION PRICES RELATIVE**  
17 **TO THE FORWARD CURVE.**

18 **A20.** SSO auction prices should reflect the forward curve, since SSO suppliers can use  
19 these forwards to hedge their SSO commitments that result from the SSO  
20 auctions. If the SSO auction outcomes are efficient, auction prices will reflect the  
21 forward curve plus a modest premium.

1 **Q21. PLEASE DISCUSS WHY SSO AUCTION PRICES WILL REFLECT A**  
2 **PREMIUM OVER THE FORWARD CURVE.**

3 **A21.** SSO suppliers will include a premium in their offers into SSO auctions to reflect a  
4 number of costs not reflected in the forward curve, including the following:

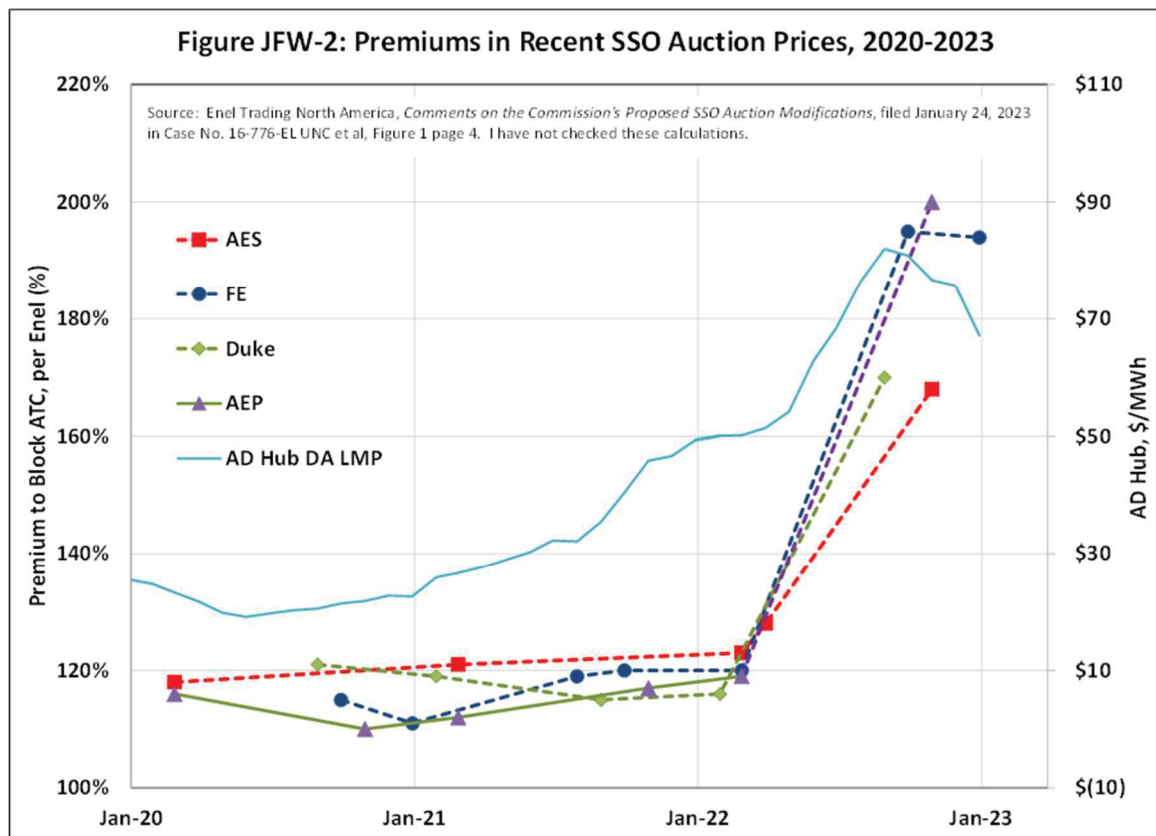
- 5 1. SSO suppliers serve portions of the actual SSO customer load, which  
6 varies through the day and by season, while the forward curve reflects  
7 constant quantities. Varying load quantities are more costly to serve.
- 8 2. SSO suppliers are obligated to serve SSO load at the SSO auction price, so  
9 they face price risk to the extent they are unable to fully hedge. SSO  
10 quantities vary as customers switch into and out of SSO service, creating  
11 additional risk that will likely be reflected in SSO auction offer prices.

12  
13 Therefore, in evaluating SSO auction outcomes, I focus on the premium reflected  
14 in the auction price to contemporaneous forward prices; a low premium suggests a  
15 relatively efficient and competitive auction outcome with little risk premium  
16 reflected, while a higher premium suggests either a lack of competition, higher  
17 perceived risk, or some other issue with a detrimental impact on auction  
18 efficiency.

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1 **Q22. PLEASE PRESENT THE PREMIUMS OVER THE FORWARD CURVE**  
2 **REFLECTED IN RECENT SSO AUCTION PRICES.**

3 **A22.** While I lack the data to perform these calculations, other stakeholders have  
4 performed the calculations and presented the results in recent filings. Figure JFW-  
5 2 shows the premiums over forward prices reflected in the Ohio utilities' recent  
6 SSO auction prices, as presented by Enel Trading North America ("Enel") in a  
7 recent filing.<sup>1</sup> These premiums had been in the 10% to 20% range through early  
8 2022. However, in all of the auctions from September 2022 on, these premiums  
9 were much higher, as Figure JFW-2, based on Enel's calculations, suggests.



<sup>1</sup> Enel Trading North America, *Comments on the Commission's Proposed SSO Auction Modifications*, filed January 24, 2023 in Case No. 16-776-EL UNC, et al., Figure 1 p. 4. I lack the data to check these calculations.

1 **Q23. WHY WERE THE SSO AUCTION PREMIUMS SO MUCH HIGHER LATER**  
2 **IN 2022?**

3 **A23.** As discussed earlier and shown in Figure JFW-1, AD Hub energy prices rose  
4 sharply in late 2021 and in 2022. These substantial increases were unexpected and  
5 SSO suppliers likely updated their models to expect greater price volatility and  
6 risk going forward.

7  
8 However, the premiums sought by suppliers were still close to 20% into early  
9 2022. The sharp increase in the previously stable AD Hub prices shown in Figure  
10 JFW-1 apparently accounts for only a portion of the increase in SSO auction  
11 premiums.

12  
13 In the latter half of 2022, SSO sales quantities rose sharply for most of the Ohio  
14 utilities, as many customers, including commercial and industrial customers,  
15 returned to SSO service. And in August 2022, the Northeast Ohio Public Energy  
16 Council (NOPEC), a residential aggregator, returned its customers back to SSO  
17 service.<sup>2</sup> On top of the large increase in wholesale market prices, the sharp  
18 increases in SSO sales quantities added quantity uncertainty and risk to the  
19 perceived increase in price volatility and risk.

---

<sup>2</sup> See, for instance, NOPEC press release August 24, 2022, *NOPEC Opts to Transition Customers to Utility Default Service – Residential and Small Business Customers To Get Lower Prices*, <https://www.nopec.org/newsroom/post/nopec-electric-customer-transition>.



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1        Apparently, a perceived increase in price and quantity risk has led SSO suppliers  
2        to offer into SSO auctions at much higher risk premiums in the latter half of 2022,  
3        leading to higher clearing prices and higher premiums over the forward curve, as  
4        shown in Figure JFW-2.

5

6        ***Q24. PLEASE DISCUSS RECENT TRENDS IN SSO SALES.***

7        ***A24.*** SSO sales data is available at the PUCO website.<sup>3</sup> This data shows that for AEP  
8        Ohio, SSO sales were 20% to 30% of total monthly sales over 2019 into 2022 but  
9        rose in the latter half of 2022 to 50% in January and February of 2023.

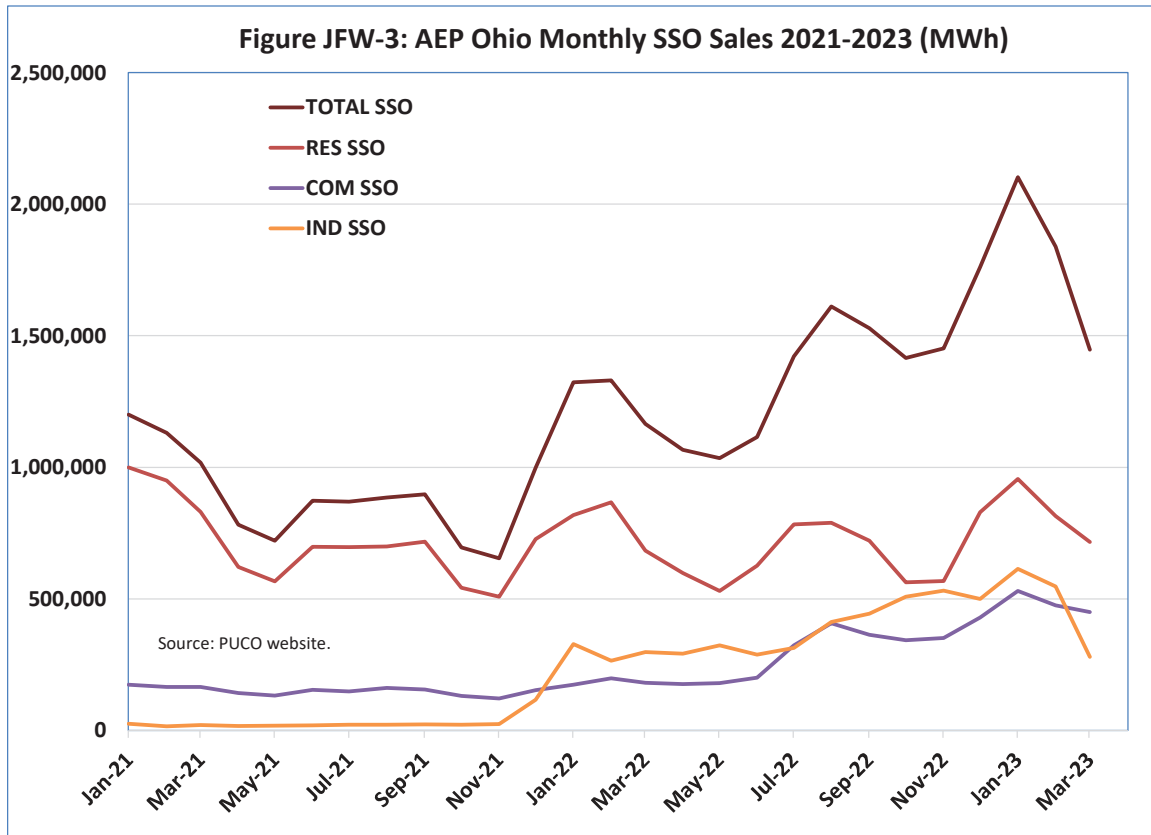
10

11        Figure JFW-3 shows SSO sales by customer class for AEP Ohio since 2021. The  
12        increase in SSO sales was due to commercial and industrial customers returning  
13        to SSO service; the residential sales, while exhibiting seasonal patterns, have been  
14        steady.

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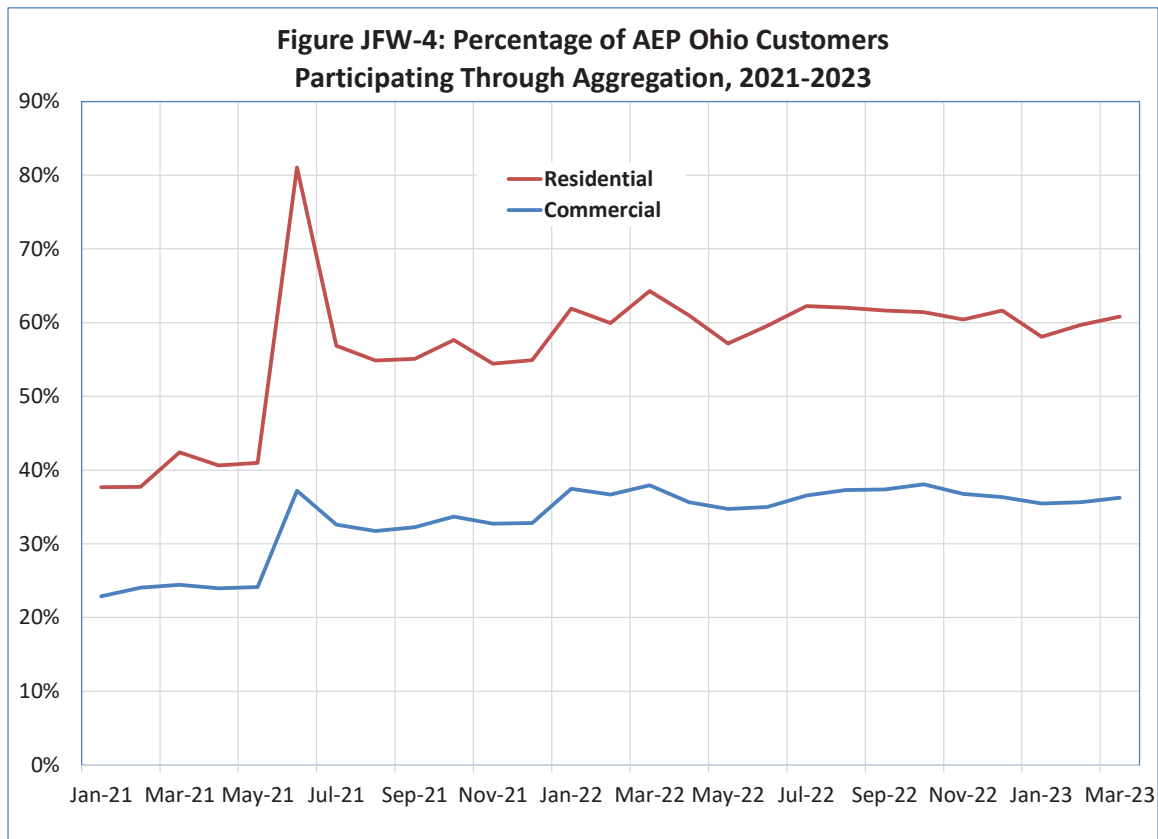
<sup>3</sup> Ohio Public Utilities Commission, Electric Choice Activity, available at  
<https://puco.ohio.gov/utilities/electricity/resources/ohio-customer-choice-activity>.

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- 1 **Q25. THE NOPEC ACTION MENTIONED EARLIER LED TO A LARGE**  
2 **NUMBER OF RESIDENTIAL SALES RETURNING TO SSO SERVICE.**  
3 **HAS AEP OHIO SEEN ANYTHING LIKE THAT IN ITS SERVICE**  
4 **TERRITORY?**
- 5 **A25.** No. The percentage of customers participating through aggregation has been  
6 constant recently, as shown in Figure JFW-4; the commercial and industrial load  
7 receiving SSO service has increased much more.

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1 ***Q26. IF SSO SUPPLIERS PERCEIVE RISK ASSOCIATED WITH SSO SERVICE,***  
2 ***CAN'T THEY HEDGE THIS RISK; WHY DOES IT LEAD TO HIGHER***  
3 ***RISK PREMIUMS?***

4  
5 ***A26.*** SSO suppliers can hedge using the forward curve, as noted earlier. However,  
6 hedging can be used to effectively mitigate risk only to the extent the future  
7 quantities a supplier will be called to supply are reasonably predictable. If the  
8 quantities are predictable, a supplier can hedge their expected future SSO sales  
9 based on the forward curve at the time of the auction and face low risk that the  
10 prices they have committed to provide SSO service will be very different from  
11 their cost.

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1 If instead the future SSO quantities a supplier is obligated to serve at the SSO  
2 auction price can differ substantially from expectations, hedging the auction price  
3 is risky. If a supplier fully hedges the price risk for the anticipated quantity, and  
4 then market prices decline and SSO quantities also decline (for instance, if  
5 customers switch away from SSO service to take advantage of the low market  
6 prices), the supplier holds hedges that are out of the money for quantities greater  
7 than the SSO sales quantities, leading to financial losses. Or, if the supplier fully  
8 hedges, and then market prices rise and customers return to SSO service (for  
9 instance, if customers switch back to SSO service to take advantage of the below-  
10 market prices), the supplier may be committed to serving a quantity greater than  
11 the quantity it has hedged, at an auction price that is now below market prices,  
12 again leading to financial losses.

13  
14 So SSO suppliers can (and historically likely have) effectively hedged price risk,  
15 in past years when the SSO quantities were reasonably stable. When both prices  
16 and quantities are changeable, this leads to risk that cannot be effectively hedged,  
17 and bidders into SSO auction will add larger risk premiums to account for this  
18 risk. Higher risk premiums lead to higher prices to consumers served under the  
19 standard service offer.

1 **Q26. PLEASE SUMMARIZE YOUR OBSERVATIONS ABOUT RECENT SSO**  
2 **AUCTION PRICES AND PREMIUMS.**

3 **A27.** While rising energy prices and a rising forward curve have led to higher SSO  
4 auction prices, the premiums over the forward curve reflected in SSO auction  
5 prices have also risen. The rising energy prices have undoubtedly increased  
6 expectations of future price volatility and risk, contributing to higher auction  
7 premiums. However, the large increase in premiums occurred in the latter half of  
8 2022 with rising SSO sales quantities. SSO suppliers apparently now perceive  
9 much greater risk of substantial switching into or out of SSO service, which  
10 creates risk for them that they cannot hedge very well. When SSO suppliers  
11 perceive high risk in providing SSO service, this leads them to raise their SSO  
12 offers well above the forward curve, leading to higher SSO auction prices and  
13 higher costs to customers. SSO customers ultimately pay for the risk SSO  
14 suppliers must face.

15

16 **IV. DISCUSSION OF POTENTIAL CHANGES TO SSO AUCTION RULES**  
17 **TO LEAD TO MORE EFFICIENT SSO AUCTION OUTCOMES**

18

19 **Q27. WHAT TYPES OF CHANGES TO THE SSO AUCTION STRUCTURE OR**  
20 **RULES COULD MITIGATE THIS PERCEIVED SUPPLIER RISK AND**  
21 **LEAD TO LOWER AND MORE EFFICIENT SSO AUCTION PRICES?**

22 **A28.** I will discuss three types of changes that could help reduce this risk and lead to  
23 more efficient and lower-cost SSO auction outcomes:

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1. Rules that put limits on switching into and/or out of SSO service.
2. Rules that put limits on the amount of SSO load a supplier will have to serve at the SSO auction price.
3. Holding separate SSO auctions for different customer classes.

These possible modifications to the SSO auctions are discussed in the remaining sections of my testimony.

**A. SSO auction rules limiting customers' freedom to switch into and/or out of SSO service.**

***Q28. WHAT IS THE OBJECTIVE OF RULES TO LIMIT SWITCHING INTO OR OUT OF SSO SERVICE?***

***A29.*** Such rules would place limits on customers' rights to switch into and out of SSO, with the objective of reducing the quantity risk as perceived by SSO suppliers. This could allow suppliers to hedge more effectively, and lower risk premiums could lead to more efficient and lower cost auction outcomes.

***Q29. HOW EFFECTIVE WOULD SUCH RULES BE IN REDUCING THE QUANTITY RISK FACED BY SSO SUPPLIERS?***

***A30.*** Such rules would reduce risk to a limited extent. Large amounts of load would still be allowed to switch into or out of SSO, so substantial risk would remain.

1   ***Q30. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING RULES TO***  
2   ***LIMIT SWITCHING INTO AND OUT OF SSO SERVICE.***

3   ***A31.*** While such rules do help to limit the quantity risk faced by SSO suppliers, they do  
4       not go very far in limiting this risk. And limiting customers' freedom to switch is  
5       contrary to the spirit of retail competition and could reduce the competitiveness of  
6       the market, so such rules should not go too far, and should continue to afford  
7       customers considerable flexibility to choose. To achieve efficient SSO auction  
8       results, some limits on switching may be helpful but more is likely needed to  
9       achieve efficient auction outcomes.

10

11       **B. Rules placing quantity limits on SSO suppliers' sales obligations at**  
12       **the auction price.**

13

14   ***Q31. WHAT IS THE OBJECTIVE OF RULES LIMITING THE QUANTITIES***  
15   ***SSO SUPPLIERS WILL BE OBLIGATED TO PROVIDE AT THE AUCTION***  
16   ***PRICE?***

17   ***A32.*** The objective would be to reduce the quantity and price risk as perceived by SSO  
18       suppliers, in the hope of achieving lower risk premiums and more efficient and  
19       lower cost auction outcomes for consumers.

20

21   ***Q32. WHAT IS THE LIKELY STRUCTURE SUCH RULES COULD TAKE?***

22   ***A33.*** Such rules could work as follows:

- 23       1. A baseline SSO quantity and a threshold are identified.
- 24       2. Should inflows to SSO service result in SSO sales quantities in excess of
- 25       the baseline plus threshold, SSO suppliers would only be obligated to

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1           serve the baseline plus threshold quantity at the SSO auction price and  
2           would be permitted to serve the additional load beyond the baseline plus  
3           threshold at prevailing market prices.

- 4           3.       Cost allocation rules would identify how the additional cost of the market  
5           purchases would be recovered from SSO customers (whether all SSO  
6           customers would bear the burden equally, or perhaps the most recent  
7           returning customers would bear all or much of the burden).

8  
9           The Maryland default service regulations and contracts provide an example of  
10          such rules in place.<sup>4</sup> Enel has proposed a rule of this type – placing “MW Caps”  
11          on tranches in the SSO auctions – without much detail of how this would work or  
12          how the cost would be allocated.<sup>5</sup>

13  
14          And a specific but limited version of such rules is anticipated in the Ohio  
15          legislation (the standby service charge) and is envisioned by the Company’s  
16          proposed Government Aggregation Standby Rider.

17  
18       ***Q33. PLEASE DESCRIBE THE PROPOSED GOVERNMENT AGGREGATION***  
19       ***STANDBY RIDER.***

20  
21       ***A34.***   Company witnesses Mayhan and McCulty describe the proposal. Company  
22       witness Mayhan states as follows:

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<sup>4</sup> See, for instance, Potomac Edison Company Full Requirements Service Agreement, Appendix 11.

<sup>5</sup> Enel Trading North America, Comments on the Commission's Proposed SSO Auction Modifications, filed January 24, 2023 in Case No. 16-776-EL UNC, et al., p. 14.



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I have been advised by counsel that an aggregation program dropping customers back to the Standard Service offer (SSO) should only be permitted to the extent the aggregator has paid a standby charge, consistent with the requirements of the aggregation statute. [citation to Ohio Revised Code 4928.20(I).] If no standby charge was paid, the load dropped by the aggregator would need to be served at then-current market prices via a separate procurement outside of the SSO and that separate market procurement should occur for a minimum of two years.<sup>6</sup>

The standby service proposal would apply only to municipal aggregators. If the aggregator agrees to pay the charge, SSO suppliers would receive the compensation and be committed to serving the aggregators' load at the SSO auction prices, and the aggregators' customers would bear the cost of the standby service through the Government Aggregation Standby Rider. Should the aggregator decline the standby service charge, it would then not be permitted to return customers to SSO service at the SSO auction price, such customers would be served at market prices.

***Q34. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING RULES LIMITING THE QUANTITIES SSO SUPPLIERS WILL BE OBLIGATED TO PROVIDE AT THE AUCTION PRICE.***

***A35.*** Rules limiting the quantities SSO suppliers are obligated to serve could be effective in limiting the perceived risk associated with large inflows to SSO service. However, the details of such rules could become complicated and controversial, in particular the details of which SSO customers would end up

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<sup>6</sup> Mayhan Direct p. 14.

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1       paying higher prices when the rules take effect and an SSO supplier is obtaining  
2       some supplies at market prices.

3  
4       The “Standby Service” proposal seems a reasonable approach to addressing the  
5       risk posed by large aggregators, but it does not address the risk of commercial and  
6       industrial customers returning to SSO service.

7  
8       Company witness McCulty states, “Recently, the Company has experienced  
9       increases in the SSO load due to aggregator defaults or prematurely dropping  
10      customers from the aggregation.”<sup>7</sup> However, as shown in an earlier section of my  
11      testimony, the percentage of customers participating through aggregation has been  
12      steady over time; the commercial and industrial load receiving SSO service has  
13      increased much more.

14

15   ***Q35. COULD THE STANDBY SERVICE CONCEPT BE EXTENDED TO***  
16   ***ADDRESS QUANTITY RISK ASSOCIATED WITH COMMERCIAL AND***  
17   ***INDUSTRIAL LOADS?***

18

19   ***A36.*** No. As witness Mayhan notes, the standby service is supported by existing  
20      language in the Ohio Revised Code. To provide broader SSO quantity protection  
21      and/or associated compensation would require addressing the complexities of  
22      such rules, as described above.

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<sup>7</sup> McCulty Direct p. 10.

**C. Separate SSO auctions for different customer classes.**

***Q36. PLEASE EXPLAIN WHY HOLDING SEPARATE AUCTIONS BY CUSTOMER CLASS COULD POTENTIALLY LEAD TO MORE EFFICIENT SSO AUCTION OUTCOMES.***

***A37.*** Different customer classes are different in two principal ways relevant to the cost to serve under an SSO obligation:

1. Different customer groups have different load shapes throughout the hours of the day and on a seasonal basis; in general, more variable load shapes are more costly to serve.
2. The customer groups also differ in the propensity to switch into or out of SSO service when market prices change and render a switch attractive. Generally speaking, smaller customers with less to save by switching are less likely to switch; large customers with more at stake are more likely to be watching the market for opportunities to save on their electricity costs.

Holding separate auctions for different customer classes would allow SSO suppliers to tailor their bids to the particular costs and risks presented by each class. When the costs and risks differ but the classes are included in the same auction, the lower-cost customer classes will in effect be subsidizing the service provided to the higher-cost customer classes.

1 **Q37. DO OTHER RETAIL ACCESS STATES SEPARATE DEFAULT SERVICE**  
2 **INTO DIFFERENT PRODUCTS FOR DIFFERENT CUSTOMER GROUPS?**

3 **A38.** Yes. It is common to hold separate auctions for either residential customers, or  
4 residential together with small commercial. In particular, New Jersey, Maryland,  
5 the District of Columbia, and Illinois hold separate auctions for residential  
6 together with small commercial customers. In Pennsylvania, Delaware and  
7 Massachusetts the auctions are by customer class, so residential customers have a  
8 separate auction. These approaches to standard offer service in these states have  
9 been in place for many years. The following paragraphs summarize early  
10 decisions to employ these approaches:

- 11       ▪ Massachusetts (2000), providing a six-month fixed price approach for  
12       residential and small commercial and industrial customers, and a variable  
13       price approach for medium and large commercial and industrial  
14       customers.<sup>8</sup>
- 15       ▪ New Jersey (2002), approving two auctions for Basic Generation Service,  
16       one for larger commercial and industrial customers and one for all other  
17       small customers.<sup>9</sup>

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<sup>8</sup> Massachusetts Public Utilities Commission, Opinion and Order, *Re Pricing & Procurement of Default Service*, Docket No. 99-60, issued June 30, 2000, p. 4.

<sup>9</sup> New Jersey Board of Public Utilities Decision and Order, *In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act*, Docket Nos. EX011110754 and EO02070384, issued December 11, 2001, p. 3.

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- 1           ▪ Maryland (2004), providing for Residential Standard Offer Service
- 2           ("SOS") and three types of non-residential SOS.<sup>10</sup>
- 3           ▪ Delaware (2005), providing for a fixed price SOS for all but the largest
- 4           customers and an hourly priced service for the largest customers.<sup>11</sup>
- 5           ▪ Illinois (2006), adopting an approach with three-year contracts for serving
- 6           residential and small commercial customers.<sup>12</sup>
- 7           ▪ Pennsylvania (2007), recommending different procurement strategies for
- 8           different customer classes, consistent with the level of energy knowledge,
- 9           financial resources, and opportunity to shop associated with these
- 10          groups.<sup>13</sup>

11

12   ***Q38. WHEN RESIDENTIAL CUSTOMERS ARE AGGREGATED, THE***  
13   ***AGGREGATOR IS THE DECISION-MAKER FOR THE ENTIRE GROUP.***  
14   ***DOES THIS CHANGE THE ANTICIPATED BEHAVIOR AND PERCEIVED***  
15   ***RISK ASSOCIATED WITH THESE CUSTOMERS?***

16   ***A39.*** Yes, it likely will. Additional rules limiting switching and/or limiting the SSO  
17   suppliers' quantity obligations at the SSO auction prices (such as the "Standby

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<sup>10</sup> Maryland Public Service Commission Order No. 78400, *In the Matter of the Commission's Inquiry into the Competitive Selection of Electricity Supplier/Standard Offer Service*, Case No. 8098, issued April 29, 2003, p. 3.

<sup>11</sup> Delaware Public Service Commission Order No. 6746, *In the Matter of the Provision of Standard Offer Supply to Retail Consumers in the Service Territory of Delmarva Power & Light Company after May 1, 2006*, Docket No. 04-391, issued October 11, 2005, p. 4.

<sup>12</sup> Illinois Commerce Commission, Order, Central Illinois Light Company d/b/a AmerenCILCO, Docket No. 05-1650, issued January 24, 2006, p. 129.

<sup>13</sup> Pennsylvania Public Utility Commission Final Policy Statement, Default Service and Retail Electric Markets, Docket No. M-00072009, issued May 10, 2007, p. 6.

1 Service” rules discussed above in my testimony), would likely also be needed to  
2 address large aggregations of smaller customers.

3

4 **V. CONCLUSION**

5

6 ***Q39. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE***  
7 ***PROPOSAL TO HOLD SEPARATE AUCTIONS BY CUSTOMER GROUP.***

8 ***A40.*** Holding separate SSO auctions for residential, or perhaps residential and small  
9 commercial, customers, an approach many other states have adopted, is the best  
10 option for improving the efficiency of SSO auction outcomes. SSO suppliers are  
11 likely to find smaller customers less likely to switch into and out of SSO service  
12 and, therefore, less risky to serve.

13

14 ***Q40. PLEASE SUMMARIZE YOUR EVALUATION OF POTENTIAL CHANGES***  
15 ***TO AUCTION RULES.***

16

17 ***A41.*** Strong rules limiting switching and/or limiting SSO suppliers’ quantity  
18 obligations can be helpful in reducing SSO suppliers’ risk. However, I believe  
19 separate auctions for residential SSO customers, perhaps including smaller  
20 commercial customers, is the most important opportunity to limit SSO supplier  
21 risk and increase the chance of efficient auction outcomes.

22

23 ***Q41. DOES THIS COMPLETE YOUR PRE-FILED TESTIMONY?***

24 ***A42.*** Yes, it does. However, I understand that I may be asked to update or supplement  
25 my testimony based on new information that may become available.

## **CERTIFICATE OF SERVICE**

I hereby certify that a true copy of the foregoing Direct Testimony of James F. Wilson on Behalf of Office of the Ohio Consumers' Counsel was served via electronic transmission this 9<sup>th</sup> day of June 2023 upon the parties below.

/s/ William Michael

William Michael

Assistant Consumers' Counsel

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**SUMMARY**

James F. Wilson is an economist with over 35 years of consulting experience, primarily in the electric power and natural gas industries. Many of his assignments have pertained to the economic and policy issues arising from the interplay of competition and regulation in these industries, including restructuring policies, market design, market analysis and market power. Other recent engagements have involved resource adequacy and capacity markets, contract litigation and damages, forecasting and market evaluation, pipeline rate cases and evaluating allegations of market manipulation. Mr. Wilson has been involved in electricity restructuring and wholesale market design for over twenty years in California, PJM, New England, Russia and other regions. He also spent five years in Russia in the early 1990s advising on the reform, restructuring and development of the Russian electricity and natural gas industries.

Mr. Wilson has submitted affidavits and testified in Federal Energy Regulatory Commission and state regulatory proceedings. His papers have appeared in the *Energy Journal*, *Electricity Journal*, *Public Utilities Fortnightly* and other publications, and he often presents at industry conferences.

Prior to founding Wilson Energy Economics, Mr. Wilson was a Principal at LECG, LLC. He has also worked for ICF Resources, Decision Focus Inc., and as an independent consultant.

**EDUCATION**

MS, Engineering-Economic Systems, Stanford University, 1982  
BA, Mathematics, Oberlin College, 1977

**RECENT ENGAGEMENTS**

- Analysis of provisions to enhance resource fuel security in day-ahead and real-time wholesale electricity markets.
- Evaluated peak electric load forecasts and enhancements to load forecasting methodologies.
- Evaluated a probabilistic analysis to determine the electric generating capacity reserve margin to satisfy resource adequacy criteria.
- Evaluated the potential impact of an electricity generation operating reserve demand curve on a wholesale electricity market with a capacity construct.
- Developed wholesale capacity market enhancements to accommodate seasonal resources and resource adequacy requirements.
- Evaluation of wholesale electricity market design enhancements to accommodate state initiatives to promote state environmental and other policy objectives.
- Evaluation of proposals for natural gas distribution system expansions.
- Various consulting assignments on wholesale electric capacity market design issues in PJM, New England, the Midwest, Texas, and California.
- Cost-benefit analysis of a new natural gas pipeline.
- Evaluation of the impacts of demand response on electric generation capacity mix and emissions.



- Panelist on a FERC technical conference on capacity markets.
- Affidavit on the potential for market power over natural gas storage.
- Executive briefing on wind integration and linkages to short-term and longer-term resource adequacy approaches.
- Affidavit on the impact of a centralized capacity market on the potential benefits of participation in a Regional Transmission Organization (RTO).
- Participated in a panel teleseminar on resource adequacy policy and modeling.
- Affidavit on opt-out rules for centralized capacity markets.
- Affidavits on minimum offer price rules for RTO centralized capacity markets.
- Evaluated electric utility avoided cost in a tax dispute.
- Advised on pricing approaches for RTO backstop short-term capacity procurement.
- Affidavit evaluating the potential impact on reliability of demand response products limited in the number or duration of calls.
- Evaluated changing patterns of natural gas production and pipeline flows, developed approaches for pipeline tolls and cost recovery.
- Evaluated an electricity peak load forecasting methodology and forecast; evaluated regional transmission needs for resource adequacy.
- Participated on a panel teleseminar on natural gas price forecasting.
- Affidavit evaluating a shortage pricing mechanism and recommending changes.
- Testimony in support of proposed changes to a forward capacity market mechanism.
- Reviewed and critiqued an analysis of the economic impacts of restrictions on oil and gas development.
- Advised on the development of metrics for evaluating the performance of Regional Transmission Organizations and their markets.
- Prepared affidavit on the efficiency benefits of excess capacity sales in readjustment auctions for installed capacity.
- Prepared affidavit on the potential impacts of long lead time and multiple uncertainties on clearing prices in an auction for standard offer electric generation service.

## **EARLIER PROFESSIONAL EXPERIENCE**

LECG, LCC, Washington, DC 1998–2009.

### Principal

- Reviewed and commented on an analysis of the target installed capacity reserve margin for the Mid Atlantic region; recommended improvements to the analysis and assumptions.
- Evaluated an electric generating capacity mechanism and the price levels to support adequate capacity; recommended changes to improve efficiency.
- Analyzed and critiqued the methodology and assumptions used in preparation of a long run electricity peak load forecast.
- Evaluated results of an electric generating capacity incentive mechanism and critiqued the mechanism's design; prepared a detailed report. Evaluated the impacts of the mechanism's flaws on prices and costs and prepared testimony in support of a formal complaint.
- Analyzed impacts and potential damages of natural gas migration from a storage field.
- Evaluated allegations of manipulation of natural gas prices and assessed the potential impacts of natural gas trading strategies.
- Prepared affidavit evaluating a pipeline's application for market-based rates for interruptible transportation and the potential for market power.
- Prepared testimony on natural gas industry contracting practices and damages in a contract dispute.
- Prepared affidavits on design issues for an electric generating capacity mechanism for an eastern US regional transmission organization; participated in extensive settlement discussions.

- Prepared testimony on the appropriateness of zonal rates for a natural gas pipeline.
- Evaluated market power issues raised by a possible gas-electric merger.
- Prepared testimony on whether rates for a pipeline extension should be rolled-in or incremental under Federal Energy Regulatory Commission (“FERC”) policy.
- Prepared an expert report on damages in a natural gas contract dispute.
- Prepared testimony regarding the incentive impacts of a ratemaking method for natural gas pipelines.
- Prepared testimony evaluating natural gas procurement incentive mechanisms.
- Analyzed the need for and value of additional natural gas storage in the southwestern US.
- Evaluated market issues in the restructured Russian electric power market, including the need to introduce financial transmission rights, and policies for evaluating mergers.
- Affidavit on market conditions in western US natural gas markets and the potential for a new merchant gas storage facility to exercise market power.
- Testimony on the advantages of a system of firm, tradable natural gas transmission and storage rights, and the performance of a market structure based on such policies.
- Testimony on the potential benefits of new independent natural gas storage and policies for providing transmission access to storage users.
- Testimony on the causes of California natural gas price increases during 2000-2001 and the possible exercise of market power to raise natural gas prices at the California border.
- Advised a major US utility with regard to the Federal Energy Regulatory Commission’s proposed Standard Market Design and its potential impacts on the company.
- Reviewed and critiqued draft legislation and detailed market rules for reforming the Russian electricity industry, for a major investor in the sector.
- Analyzed the causes of high prices in California wholesale electric markets during 2000 and developed recommendations, including alternatives for price mitigation. Testimony on price mitigation measures.
- Summarized and critiqued wholesale and retail restructuring and competition policies for electric power and natural gas in select US states, for a Pacific Rim government contemplating energy reforms.
- Presented testimony regarding divestiture of hydroelectric generation assets, potential market power issues, and mitigation approaches to the California Public Utilities Commission.
- Reviewed the reasonableness of an electric utility’s wholesale power purchases and sales in a restructured power market during a period of high prices.
- Presented an expert report on failure to perform and liquidated damages in a natural gas contract dispute.
- Presented a workshop on Market Monitoring to a group of electric utilities in the process of forming an RTO.
- Authored a report on the screening approaches used by market monitors for assessing exercise of market power, material impacts of conduct, and workable competition.
- Developed recommendations for mitigating locational market power, as part of a package of congestion management reforms.
- Provided analysis in support of a transmission owner involved in a contract dispute with generators providing services related to local grid reliability.
- Authored a report on the role of regional transmission organizations in market monitoring.
- Prepared market power analyses in support of electric generators’ applications to FERC for market-based rates for energy and ancillary services.
- Analyzed western electricity markets and the potential market power of a large producer under various asset acquisition or divestiture strategies.
- Testified before a state commission regarding the potential benefits of retail electric competition and issues that must be addressed to implement it.

- Prepared a market power analysis in support of an acquisition of generating capacity in the New England market.
- Advised a California utility regarding reform strategies for the California natural gas industry, addressing market power issues and policy options for providing system balancing services.

ICF RESOURCES, INC., Fairfax, VA, 1997–1998.

Project Manager

- Reviewed, critiqued and submitted testimony on a New Jersey electric utility's restructuring proposal, as part of a management audit for the state regulatory commission.
- Assisted a group of US utilities in developing a proposal to form a regional Independent System Operator (ISO).
- Researched and reported on the emergence of Independent System Operators and their role in reliability, for the Department of Energy.
- Provided analytical support to the Secretary of Energy's Task Force on Electric System Reliability on various topics, including ISOs. Wrote white papers on the potential role of markets in ensuring reliability.
- Recommended near-term strategies for addressing the potential stranded costs of non-utility generator contracts for an eastern utility; analyzed and evaluated the potential benefits of various contract modifications, including buyout and buydown options; designed a reverse auction approach to stimulating competition in the renegotiation process.
- Designed an auction process for divestiture of a Northeastern electric utility's generation assets and entitlements (power purchase agreements).
- Participated in several projects involving analysis of regional power markets and valuation of existing or proposed generation assets.

IRIS MARKET ENVIRONMENT PROJECT, 1994–1996.

Project Director, Moscow, Russia

Established and led a policy analysis group advising the Russian Federal Energy Commission and Ministry of Economy on economic policies for the electric power, natural gas, oil pipeline, telecommunications, and rail transport industries (*the Program on Natural Monopolies*, a project of the IRIS Center of the University of Maryland Department of Economics, funded by USAID):

- Advised on industry reforms and the establishment of federal regulatory institutions.
- Advised the Russian Federal Energy Commission on electricity restructuring, development of a competitive wholesale market for electric power, tariff improvements, and other issues of electric power and natural gas industry reform.
- Developed policy conditions for the IMF's \$10 billion Extended Funding Facility.
- Performed industry diagnostic analyses with detailed policy recommendations for electric power (1994), natural gas, rail transport and telecommunications (1995), oil transport (1996).

Independent Consultant stationed in Moscow, Russia, 1991–1996

Projects for the WORLD BANK, 1992-1996:

- Bank Strategy for the Russian Electricity Sector. Developed a policy paper outlining current industry problems and necessary policies, and recommending World Bank strategy.
- Russian Electric Power Industry Restructuring. Participated in work to develop recommendations to the Russian Government on electric power industry restructuring.
- Russian Electric Power Sector Update. Led project to review developments in sector restructuring, regulation, demand, supply, tariffs, and investment.
- Russian Coal Industry Restructuring. Analyzed Russian and export coal markets and developed forecasts of future demand for Russian coal.
- World Bank/IEA Electricity Options Study for the G-7. Analyzed mid- and long-term electric power demand and efficiency prospects and developed forecasts.

- Russian Energy Pricing and Taxation. Developed recommendations for liberalizing energy markets, eliminating subsidies and restructuring tariffs for all energy resources.

Other consulting assignments in Russia, 1991–1994:

- Advised on projects pertaining to Russian energy policy and the transition to a market economy in the energy industries, for the Institute for Energy Research of the Russian Academy of Sciences.
- Presented seminars on the structure, economics, planning, and regulation of the energy and electric power industries in the US, for various Russian clients.

DECISION FOCUS INC., Mountain View, CA, 1983–1992

Senior Associate, 1985-1992.

- For the Electric Power Research Institute, led projects to develop decision-analytic methodologies and models for evaluating long term fuel and electric power contracting and procurement strategies. Applied the methodologies and models in numerous case studies, and presented several workshops and training sessions on the approaches.
- Analyzed long-term and short-term natural gas supply decisions for a large California gas distribution company following gas industry unbundling and restructuring.
- Analyzed long term coal and rail alternatives for a midwest electric utility.
- Evaluated bulk power purchase alternatives and strategies for a New Jersey electric utility.
- Performed a financial and economic analysis of a proposed hydroelectric project.
- For a natural gas pipeline company serving the Northeastern US, forecasted long-term natural gas supply and transportation volumes. Developed a forecasting system for staff use.
- Analyzed potential benefits of diversification of suppliers for a natural gas pipeline company.
- Evaluated uranium contracting strategies for an electric utility.
- Analyzed telecommunications services markets under deregulation, developed and implemented a pricing strategy model. Evaluated potential responses of residential and business customers to changes in the client's and competitors' telecommunications services and prices.
- Analyzed coal contract terms and supplier diversification strategies for an eastern electric utility.
- Analyzed oil and natural gas contracting strategies for an electric utility.

## TESTIMONY AND AFFIDAVITS

PJM Interconnection, L.L.C., FERC Docket No. ER22-2984 (RPM Quadrennial Review), Affidavit in Support of the Comments of the Public Interest Entities, October 21, 2022; Reply Affidavit in Support of the Reply Comments of the Public Interest Entities, November 4, 2022.

In the Matter of the Application of Pacific Gas and Electric Company for Adoption of Electric Revenue Requirements and Rates Associated with its 2023 Energy Resource Recovery Account, California Public Utilities Commission Application 22-05-029, Direct Testimony on behalf of Small Business Utility Advocates, September 7, 2022.

In the Matter of the Application of DTE Electric Company for Approval to Implement a Power Supply Cost Recovery Plan for the 12 months ending December 31, 2022, Michigan Public Service Commission Case No. U-21050, Direct Testimony on behalf of Michigan Environmental Council, August 3, 2022.

In Re: Washington Utilities and Transportation Commission v. Avista Corporation d/b/a Avista Utilities; In the Matter of the Electric Service Reliability Reporting Plan of Avista Corporation d/b/a Avista Utilities; Dockets UE-220053, UG-220054, and UE-210854 (Consolidated), Joint Testimony in Support of the Full Multiparty Settlement on behalf of Small Business Utility Advocates, July 8, 2022; Supplemental Joint Testimony in Support of the Colstrip Tracker and Schedule 99, July 29, 2022; Testimony at hearings September 21, 2022.

In Re: Georgia Power Company's 2022 Integrated Resource Plan and 2022 Application for the Certification, Decertification, and Amended Demand- Side Management Plan; Georgia Public Service Commission Docket Nos. 44160 and 44161; Direct Testimony on behalf of Georgia Interfaith Power & Light and the Partnership For Southern Equity, May 6, 2022; testimony at hearings May 26, 2022.

Clean Air Council et al. v. Pennsylvania Department of Environmental Protection, Environmental Hearing Board Docket No. 2021-055, *Review and Evaluation of the Need for and Alternatives to the Proposed Renovo Energy Center Power Plant*, report prepared on behalf of Clean Air Council, Citizens for Pennsylvania's Future, and the Center for Biological Diversity, filed March 30, 2022; additional affidavit, June 29, 2022.

Appalachian Power Company and Wheeling Power Company, Petition for Commission Consent and Approval to Enter into Ownership and Operating Agreements for the Mitchell Plant, Public Service Commission of West Virginia Case No. 21-0810-E-PC, Direct Testimony on Behalf of West Virginia Citizen Action Group, Solar United Neighbors, and Energy Efficient West Virginia, March 28, 2022.

In the matter of the Application of DTE Electric Company for Reconciliation of its Power Supply Cost Recovery Plan for the 12-month Period Ending December 31, 2020, Michigan Public Service Commission Case No. U-20528, Direct Testimony on behalf of Michigan Environmental Council, November 23, 2021.

In the Matter of the Application of San Diego Gas & Electric Company for Approval of its 2022 Electric Sales Forecast, California Public Utilities Commission Application 21-08-010, Direct Testimony on behalf of Small Business Utility Advocates, October 1, 2021.

In the Matter of the Nova Scotia Power Inc. 2021 Load Forecast Report, Nova Scotia Utility and Review Board Matter No. M10109, Evidence on behalf of the Nova Scotia Consumer Advocate, July 21, 2021.

In the Matter of the Application of DTE Electric Company for Approval to Implement a Power Supply Cost Recovery Plan for the 12 months ending December 31, 2021, Michigan Public Service Commission Case No. U-20826, Direct Testimony on behalf of Michigan Environmental Council, June 6, 2021; Surrebuttal Testimony September 8, 2021.

Independent Market Monitor for PJM v. PJM Interconnection, LLC, FERC Docket No. EL19-47-000, and Office of the People's Counsel for District of Columbia et al v. PJM Interconnection, LLC, FERC Docket No. Docket No. EL19-63-000, Affidavit in Support of the Reply Brief of the Joint Consumer Advocates, June 9, 2021.

In Re: Application for the issuance of a certificate of public convenience and necessity for the internal modifications at coal fired generating plants necessary to comply with federal environmental regulations, Appalachian Power Company and Wheeling Power Company, Public Service Commission of West Virginia Case No. 20-1040-E-CN, Direct Testimony on behalf of West Virginia Citizens Action Group, Solar United Neighbors, and Energy Efficient West Virginia, Direct Testimony May 6, 2021; Rebuttal Testimony May 20, 2021; testimony at hearings June 9, 2021; Supplemental Direct Testimony September 24, 2021; testimony at additional hearings September 24, 2021.

In the Matter of the 2020 Biennial Integrated Resource Plans and Related 2020 REPS Compliance Plans of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, *Review and Evaluation of the 2020 Resource Adequacy Studies Relied Upon for the Duke Energy Carolinas and Duke Energy Progress 2020 Integrated Resource Plans*, Attachment 5 to the Partial Initial Comments of Southern Alliance for Clean Energy, Sierra Club, and Natural Resources Defense Council, North Carolina Utilities Commission Docket No. E-100 Sub 165, March 1, 2021.

In the Matter of South Carolina Energy Freedom Act (House Bill 3659) Proceeding Related to S.C. Code Ann. Section 58-37-40 and Integrated Resource Plans for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, South Carolina Public Service Commission Docket Nos. 2019-224-E and 2019-225-E, Direct Testimony on behalf of Natural Resources Defense Council, Southern Alliance for Clean Energy, Sierra Club, South Carolina Coastal Conservation League, and Upstate Forever, February 5, 2021; Surrebuttal Testimony April 15, 2021.

In the matter of the Application of DTE Electric Company for Reconciliation of its Power Supply Cost Recovery Plan for the 12-month Period Ending December 31, 2019, Michigan Public Service Commission Case No. U-20222, Direct Testimony on behalf of Michigan Environmental Council, October 27, 2020.

Virginia Electric and Power Company's 2020 Integrated Resource Plan filing, Virginia State Corporation Commission Case No. PUR-2020-00035, Direct Testimony on behalf of Environmental Respondent, September 15, 2020; testimony at hearings, October 27, 2020.



PJM Interconnection, L.L.C., FERC Docket Nos. ER19-1486 and EL19-58-003, Affidavit in Support of the Public Interest and Customer Organizations' Partial Protest of and Comments on PJM's Compliance Filing Regarding Energy and Ancillary Service Offset, September 2, 2020.

In the Matter of the Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery Plan in its Rate Schedules for 2020 Metered Jurisdictional Sales of Electricity, Michigan Public Service Commission Case No. U-20527, Direct Testimony on behalf of Michigan Environmental Council, June 17, 2020.

ISO New England Inc., FERC Docket Nos. EL18-182, ER20-1567 (New England Energy Security), Prepared Testimony in Support of the Protest of the New England States Committee on Electricity, May 15, 2020.

Proceedings on Motion of the Commission to Consider Resource Adequacy Matters, New York Public Service Commission Case No. 19-E-0530, Reply Affidavit on behalf of Natural Resources Defense Council, Sustainable FERC Project, Sierra Club, New Yorkers for Clean Power, Environmental Advocates of New York, and Vote Solar, January 31, 2020.

In the Matter of the Application of DTE Electric Company for Reconciliation of its Power Supply Cost Recovery Plan for the 12-month Period Ending December 31, 2018, Michigan Public Service Commission Case No. U-20203, Direct Testimony on behalf of Michigan Environmental Council, January 17, 2020.

In Re: Joint Application of Longview Power II, LLC and Longview Renewable Power, LLC to Authorize the Construction and Operation of Two Wholesale Electric Generating Facilities and One High-Voltage Electric Transmission Line in Monongalia County, Public Service Commission of West Virginia Case No. 19-0890-E-CS-CN, Direct Testimony on behalf of Sierra Club, January 3, 2020; testimony at hearings January 30, 2019.

In Re: Alabama Power Company Petition for a Certificate of Convenience and Necessity, Alabama Public Service Commission Docket No. 32953, Direct Testimony on Behalf of Energy Alabama and Gasp, December 4, 2019; testimony at hearings March 11, 2020; declaration (re COVID-19 impact) September 11, 2020.

In the Matter of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC Standard Offer, Avoided Cost Methodologies, and Form Contract Power Purchase Agreements, South Carolina Public Service Commission Docket Nos. 2019-185-E and 2019-186-E, Direct Testimony on behalf of the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy, September 11, 2019; surrebuttal testimony, October 11, 2019; direct and surrebuttal testimony at hearings, October 22, 2019.

In the Matter of the Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery Plan in its Rate Schedules for 2019 Metered Jurisdictional Sales of Electricity, Michigan Public Service Commission Case No. U-20221, Direct Testimony on behalf of Michigan Environmental Council, May 28, 2019.

PJM Interconnection, L.L.C., FERC Docket Nos. EL19-58 and ER19-1486 (Reserve Pricing - ORDC), Affidavit in Support of the Protest of the Clean Energy Advocates, May 15, 2019.

PJM Interconnection, L.L.C., FERC Docket Nos. EL19-58 and ER19-1486 (Reserve Pricing - Transition), Affidavit in Support of the Protests of the PJM Load/Customer Coalition and Clean Energy Advocates, May 15, 2019.

In Re: Georgia Power Company's 2019 Integrated Resource Plan, Georgia Public Service Commission Docket No. 42310, Direct Testimony on Behalf of Georgia Interfaith Power & Light and the Partnership For Southern Equity, April 25, 2019; testimony at hearings May 14, 2019.

PJM Interconnection, L.L.C., FERC Docket No. EL19-63 (RPM Market Supplier Offer Cap), Affidavit in Support of the Complaint of the Joint Consumer Advocates, April 15, 2019.

In the Matter of 2018 Biennial Integrated Resource Plans and Related 2018 REPS Compliance Plans, North Carolina Utilities Commission Docket No. E-100 Sub 157, Review and Evaluation of the Load Forecasts, and Review and Evaluation of Resource Adequacy and Solar Capacity Value Issues, with regard to the Duke Energy Carolinas and Duke Energy Progress 2018 Integrated Resource Plans, Attachments 3 and 4 to the comments of Southern Alliance for Clean Energy, Sierra Club, and the

Natural Resources Defense Council, March 7, 2019; presentation at technical conference, January 8, 2020.

In the Matter of Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities – 2018, North Carolina Utilities Commission Docket No. E-100 Sub 158, Review and Evaluation of Resource Adequacy and Solar Capacity Value Issues with regard to the Duke Energy Carolinas and Duke Energy Progress 2018 Integrated Resource Plans and Avoided Cost Filing, Attachment B to the Initial Comments of the Southern Alliance for Clean Energy, February 12, 2019.

PJM Interconnection, L.L.C., FERC Docket No. ER19-105 (RPM Quadrennial Review), Affidavit in Support of the Limited Protest and Comments of the Public Interest Entities, November 19, 2018.

PJM Interconnection, L.L.C., FERC Docket No. EL18-178 (MOPR and FRR Alternative), Affidavit in Support of the Comments of the FRR-RS Supporters, October 2, 2018; Reply Affidavit on behalf of Clean Energy and Consumer Advocates, November 6, 2018.

Virginia Electric and Power Company's 2018 Integrated Resource Plan filing, Virginia State Corporation Commission Case No. PUR-2018-00065, Direct Testimony on behalf of Environmental Respondents, August 10, 2018; testimony at hearings September 25, 2018; Supplemental Testimony, April 16, 2019.

In the Matter of the Application of Duke Energy Ohio for an Increase in Electric Distribution Rates, etc., Public Utilities Commission of Ohio Case No. 17-32-EL-AIR et al, Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, June 25, 2018; deposition, July 3, 2018; testimony at hearings, July 19, 2018.

In the Matter of the Application of DTE Gas Company for Approval of a Gas Cost Recovery Plan, 5-year Forecast and Monthly GCR Factor for the 12 Months ending March 31, 2019, Michigan Public Service Commission Case No. U-18412, Direct Testimony on behalf of Michigan Environmental Council, June 7, 2018.

Constellation Mystic Power, L.L.C., FERC Docket No. ER18-1639-000 (Mystic Cost of Service Agreement), Affidavit in Support of the Comments of New England States Committee on Electricity, June 6, 2018; prepared answering testimony, August 23, 2018.

New England Power Generators Association, Complainant v. ISO New England Inc. Respondent, FERC Docket No. EL18-154-000 (re: capacity offer price of Mystic power plant), Affidavit in Support of the Protest of New England States Committee on Electricity, June 6, 2018.

PJM Interconnection, L.L.C., FERC Docket No. ER18-1314 (Capacity repricing or MOPR-Ex), Affidavit in Support of the Protests of DC-MD-NJ Consumer Coalition, Joint Consumer Advocates, and Clean Energy Advocates, May 7, 2018; reply affidavit, June 15, 2018.

In the Matter of the Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery Plan in its Rate Schedules for 2018 Metered Jurisdictional Sales of Electricity, Michigan Public Service Commission Case No. U-18403, Direct Testimony on behalf of Michigan Environmental Council and Sierra Club, April 20, 2018.

Virginia Electric and Power Company's 2017 Integrated Resource Plan filing, Virginia State Corporation Commission Case No. PUR-2017-00051, Direct Testimony on behalf of Environmental Respondents, August 11, 2017; testimony at hearings September 26, 2017.

Ohio House of Representatives Public Utilities Committee hearing on House Bill 178 (Zero Emission Nuclear Resource legislation), Opponent Testimony on Behalf of Natural Resources Defense Council, May 15, 2017.

In the Matter of the Application of Atlantic Coast Pipeline, Federal Energy Regulatory Commission Docket No. CP15-554, Evaluating Market Need for the Atlantic Coast Pipeline, Attachment 2 to the comments of Shenandoah Valley Network *et al*, April 6, 2017.

In the Matter of the Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery Plan in its Rate Schedules for 2017 Metered Jurisdictional Sales of Electricity, Michigan Public Service Commission Case No. U-18143, Direct Testimony on behalf of Michigan Environmental Council and Sierra Club, March 22, 2017.

In the Matter of the Petition of Washington Gas Light Company for Approval of Revised Tariff Provisions to Facilitate Access to Natural Gas in the Company's Maryland Franchise Area That Are Currently Without Natural Gas Service, Maryland Public Service Commission Case No. 9433, Direct Testimony on Behalf of the Mid-Atlantic Propane Gas Association and the Mid-Atlantic Petroleum Distributors Association, Inc., March 1, 2017; testimony at hearings, May 1, 2017.

In the Matter of Integrated Resource Plans and Related 2016 REPS Compliance Plans, North Carolina Utilities Commission Docket No. E-100 Sub 147, Review and Evaluation of the Peak Load Forecasts and Reserve Margin Determinations for the Duke Energy Carolinas and Duke Energy Progress 2016 Integrated Resource Plans, Attachments A and B to the comments of the Natural Resources Defense Council, Southern Alliance for Clean Energy, and the Sierra Club, February 17, 2017.

In the Matter of the Tariff Revisions Designated TA285-4 filed by ENSTAR Natural Gas Company, a Division of SEMCO Energy, Inc., Regulatory Commission of Alaska Case No. U-16-066, Testimony on Behalf of Matanuska Electric Association, Inc., February 7, 2017, testimony at hearings, June 21, 2017.

PJM Interconnection, L.L.C., FERC Docket No. ER17-367 (seasonal capacity), Prepared Testimony on Behalf of Advanced Energy Management Alliance, Environmental Law & Policy Center, Natural Resources Defense Council, Rockland Electric Company and Sierra Club, December 8, 2016; Declaration in support of Protest of Response to Deficiency Letter, February 13, 2017.

Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists v. Federal Energy Regulatory Commission, U.S. District Court of Appeals for the D.C. Circuit Case No. 16-1236 (Capacity Performance), Declaration, September 23, 2016.

Mountaineer Gas Company Infrastructure Replacement and Expansion Program Filing for 2016, West Virginia Public Service Commission Case No. 15-1256-G-390P, and Mountaineer Gas Company Infrastructure Replacement and Expansion Program Filing for 2017, West Virginia Public Service Commission Case No. 16-0922-G-390P, Direct Testimony on behalf of the West Virginia Propane Gas Association, September 9, 2016.

Application of Chesapeake Utilities Corporation for a General Increase in its Natural Gas Rates and for Approval of Certain Other Changes to its Natural Gas Tariff, Delaware P.S.C. Docket No. 15-1734, Direct Testimony on behalf of the Delaware Association Of Alternative Energy Providers, Inc., August 24, 2016.

Virginia Electric and Power Company's 2016 Integrated Resource Plan filing, Virginia State Corporation Commission Case No. PUE-2016-00049, Direct Testimony on behalf of Environmental Respondents, August 17, 2016; testimony at hearings October 5, 2016.

In the Matter of the Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery Plan in its Rate Schedules for 2016 Metered Jurisdictional Sales of Electricity, Michigan Public Service Commission Case No. U-17920, Direct Testimony on behalf of Michigan Environmental Council and Sierra Club, March 14, 2016.

In the Matter of the Application Seeking Approval of Ohio Power Company's Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Rider, Public Utilities Commission of Ohio Case No. 14-1693-EL-RDR: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, September 11, 2015; deposition, September 30, 2015; supplemental deposition, October 16, 2015; testimony at hearings, October 21, 2015; supplemental testimony December 28, 2015; second supplemental deposition, December 30, 2015; testimony at hearings January 8, 2016.

Indicated Market Participants v. PJM Interconnection, L.L.C., FERC Docket No. EL15-88 (Capacity Performance transition auctions), Affidavit on behalf of the Joint Consumer Representatives and Interested State Commissions, August 17, 2015.

ISO New England Inc. and New England Power Pool Participants Committee, FERC Docket No. ER15-2208 (Winter Reliability Program), Testimony on Behalf of the New England States Committee on Electricity, August 5, 2015.

Joint Consumer Representatives v. PJM Interconnection, L.L.C., FERC Docket No. EL15-83 (load forecast for capacity auctions), Affidavit in Support of the Motion to Intervene and Comments of the Public Power Association of New Jersey, July 20, 2015.



In the Matter of the Tariff Revisions Filed by ENSTAR Natural Gas Company, a Division of SEMCO Energy, Inc., Regulatory Commission of Alaska Case No. U-14-111, Testimony on Behalf of Matanuska Electric Association, Inc., May 13, 2015.

In the Matter of the Application of Ohio Edison Company et al for Authority to Provide for a Standard Service Offer Pursuant to R.C. 4928.143 in the Form of an Electric Security Plan, Public Utilities Commission of Ohio Case No. 14-1297-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel and Northeast Ohio Public Energy Council, December 22, 2014; deposition, February 10, 2015; supplemental testimony May 11, 2015; second deposition May 26, 2015; testimony at hearings, October 2, 2015; second supplemental testimony December 30, 2015; third deposition January 8, 2016; testimony at hearings January 19, 2016; rehearing direct testimony June 22, 2016; fourth deposition July 5, 2016; testimony at hearings July 14, 2016.

PJM Interconnection, L.L.C., FERC Docket No. ER14-2940 (RPM Triennial Review), Affidavit in Support of the Protest of the PJM Load Group, October 16, 2014.

In the Matter of the Application of Duke Energy Ohio for Authority to Establish a Standard Service Offer in the Form of an Electric Security Plan, Public Utilities Commission of Ohio Case No. 14-841-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, September 26, 2014; deposition, October 6, 2014; testimony at hearings, November 5, 2014.

In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer in the Form of an Electric Security Plan, Public Utilities Commission of Ohio Case No. 13-2385-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, May 6, 2014; deposition, May 29, 2014; testimony at hearings, June 16, 2014.

PJM Interconnection, L.L.C., FERC Docket No. ER14-504 (clearing of Demand Response in RPM), Affidavit in Support of the Protest of the Joint Consumer Advocates and Public Interest Organizations, December 20, 2013.

New England Power Generators Association, Inc. v. ISO New England Inc., FERC Docket No. EL14-7 (administrative capacity pricing), Testimony in Support of the Protest of the New England States Committee on Electricity, November 27, 2013.

Midwest Independent Transmission System Operator, Inc., FERC Docket No. ER11-4081 (minimum offer price rule), Affidavit In Support of Brief of the Midwest TDUs, October 11, 2013.

ANR Storage Company, FERC Docket No. RP12-479 (storage market-based rates), Prepared Answering Testimony on behalf of the Joint Intervenor Group, April 2, 2013; Prepared Cross-answering Testimony, May 15, 2013; testimony at hearings, September 4, 2013.

In the Matter of the Application of The Dayton Power and Light Company for Approval of its Market Rate Offer, Public Utilities Commission of Ohio Case No. 12-426-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, March 5, 2013; deposition, March 11, 2013.

PJM Interconnection, L.L.C., FERC Docket No. ER13-535 (minimum offer price rule), Affidavit in Support of the Protest and Comments of the Joint Consumer Advocates, December 28, 2012.

In the Matter of the Application of Ohio Edison Company, et al for Authority to Provide for a Standard Service Offer in the Form of an Electric Security Plan, Public Utilities Commission of Ohio Case No. 12-1230-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, May 21, 2012; deposition, May 30, 2012; testimony at hearings, June 5, 2012.

PJM Interconnection, L.L.C., FERC Docket No. ER12-513 (changes to RPM), Affidavit in Support of Protest of the Joint Consumer Advocates and Demand Response Supporters, December 22, 2011.

People of the State of Illinois *ex rel.* Leon A. Greenblatt, III v Commonwealth Edison Company, Circuit Court of Cook County, Illinois, deposition, September 22, 2011; interrogatory, Feb. 22, 2011.

In the Matter of the Application of Union Electric Company for Authority to Continue the Transfer of Functional Control of Its Transmission System to the Midwest Independent Transmission System Operator, Inc., Missouri PSC Case No. EO-2011-0128, Testimony in hearings, February 9, 2012; Rebuttal Testimony and Response to Commission Questions On Behalf Of The Missouri Joint Municipal Electric Utility Commission, September 14, 2011.

PJM Interconnection, L.L.C., and PJM Power Providers Group v. PJM Interconnection, L.L.C., FERC Docket Nos. ER11-2875 and EL11-20 (minimum offer price rule), Affidavit in Support of Protest of New Jersey Division of Rate Counsel, March 4, 2011, and Affidavit in Support of Request for Rehearing and for Expedited Consideration of New Jersey Division of Rate Counsel, May 12, 2011.

PJM Interconnection, L.L.C., FERC Docket No. ER11-2288 (demand response “saturation”), Affidavit in Support of Protest and Comments of the Joint Consumer Advocates, December 23, 2010.

North American Electric Reliability Corporation, FERC Docket No. RM10-10, Comments on Proposed Reliability Standard BAL-502-RFC-02: Planning Resource Adequacy Analysis, Assessment and Documentation, December 23, 2010.

In the Matter of the Reliability Pricing Model and the 2013/2014 Delivery Year Base Residual Auction Results, Maryland Public Service Commission Administrative Docket PC 22, Comments and Responses to Questions On Behalf of Southern Maryland Electric Cooperative, October 15, 2010.

PJM Interconnection, L.L.C., FERC Docket No. ER09-1063-004 (PJM compliance filing on pricing during operating reserve shortages): Affidavit In Support of Comments and Protest of the Pennsylvania Public Utility Commission, July 30, 2010.

ISO New England, Inc. and New England Power Pool, FERC Docket No. ER10-787 (minimum offer price rules): Direct Testimony On Behalf Of The Connecticut Department of Public Utility Control, March 30, 2010; Direct Testimony in Support of First Brief of the Joint Filing Supporters, July 1, 2010; Supplemental Testimony in Support of Second Brief of the Joint Filing Supporters, September 1, 2010.

PJM Interconnection, L.L.C., FERC Docket No. ER09-412-006 (RPM incremental auctions): Affidavit In Support of Protest of Indicated Consumer Interests, January 19, 2010.

In the Matter of the Application of Ohio Edison Company, et al for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Public Utilities Commission of Ohio Case No. 09-906-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers’ Counsel, December 7, 2009; deposition, December 10, 2009, testimony at hearings, December 22, 2009.

Application of PATH Allegheny Virginia Transmission Corporation for Certificates of Public Convenience and Necessity to Construct Facilities: 765 kV Transmission Line through Loudon, Frederick and Clarke Counties, Virginia State Corporation Commission Case No. PUE-2009-00043: Direct Testimony on Behalf of Commission Staff, December 8, 2009.

PJM Interconnection, L.L.C., FERC Docket No. ER09-412-000: Affidavit on Proposed Changes to the Reliability Pricing Model on behalf of RPM Load Group, January 9, 2009; Reply Affidavit, January 26, 2009.

PJM Interconnection, L.L.C., FERC Docket No. ER09-412-000: Affidavit In Support of the Protest Regarding Load Forecast To Be Used in May 2009 RPM Auction, January 9, 2009.

Maryland Public Service Commission et al v. PJM Interconnection, L.L.C., FERC Docket No. EL08-67-000: Affidavit in Support Complaint of the RPM Buyers, May 30, 2008; Supplemental Affidavit, July 28, 2008.

PJM Interconnection, L.L.C., FERC Docket No. ER08-516: Affidavit On PJM’s Proposed Change to RPM Parameters on Behalf of RPM Buyers, March 6, 2008.

PJM Interconnection, L.L.C., Reliability Pricing Model Compliance Filing, FERC Docket Nos. ER05-1410 and EL05-148: Affidavit Addressing RPM Compliance Filing Issues on Behalf of the Public Power Association of New Jersey, October 15, 2007.

TXU Energy Retail Company LP v. Leprino Foods Company, Inc., US District Court for the Northern District of California, Case No. C01-20289: Testimony at trial, November 15-29, 2006; Deposition, April 7, 2006; Expert Report on Behalf of Leprino Foods Company, March 10, 2006.

Gas Transmission Northwest Corporation, Federal Energy Regulation Commission Docket No. RP06-407: Reply Affidavit, October 26, 2006; Affidavit on Behalf of the Canadian Association of Petroleum Producers, October 18, 2006.

PJM Interconnection, L.L.C., Reliability Pricing Model, FERC Docket Nos. ER05-1410 and EL05-148: Supplemental Affidavit on Technical Conference Issues, June 22, 2006; Supplemental Affidavit Addressing Paper Hearing Topics, June 2, 2006; Affidavit on Behalf of the Public Power Association of New Jersey, October 19, 2005.

Maritimes & Northeast Pipeline, L.L.C., FERC Docket No. RP04-360-000: Prepared Cross Answering Testimony, March 11, 2005; Prepared Direct and Answering Testimony on Behalf of Firm Shipper Group, February 11, 2005.

Dynegy Marketing and Trade v. Multiut Corporation, US District Court of the Northern District of Illinois, Case. No. 02 C 7446: Deposition, September 1, 2005; Expert Report in response to Defendant's counterclaims, March 21, 2005; Expert Report on damages, October 15, 2004.

Application of Pacific Gas and Electric Company, California Public Utilities Commission proceeding A.04-03-021: Prepared Testimony, Policy for Throughput-Based Backbone Rates, on behalf of Pacific Gas and Electric Company, May 21, 2004.

Gas Market Activities, California Public Utilities Commission Order Instituting Investigation I.02-11-040: Testimony at hearings, July, 2004; Prepared Testimony, Comparison of Incentives Under Gas Procurement Incentive Mechanisms, on behalf of Pacific Gas and Electric Company, December 10, 2003.

Application of Red Lake Gas Storage, L.P., FERC Docket No. CP02-420, Affidavit in support of application for market-based rates for a proposed merchant gas storage facility, March 3, 2003.

Application of Pacific Gas and Electric Company, California Public Utilities Commission proceeding A.01-10-011: Testimony at hearings, April 1-2, 2003; Rebuttal Testimony, March 24, 2003; Prepared Testimony, Performance of the Gas Accord Market Structure, on behalf of Pacific Gas and Electric Company, January 13, 2003.

Application of Wild Goose Storage, Inc., California Public Utilities Commission proceeding A.01-06-029: Testimony at hearings, November, 2001; Prepared testimony regarding policies for backbone expansion and tolls, and potential ratepayer benefits of new storage, on behalf of Pacific Gas and Electric Company, October 24, 2001.

Public Utilities Commission of the State of California v. El Paso Natural Gas Co., FERC Docket No. RP00-241: Testimony at hearings, May-June, 2001; Prepared Testimony on behalf of Pacific Gas and Electric Company, May 8, 2001.

Application of Pacific Gas and Electric Company, California Public Utilities Commission proceeding A.99-09-053: Prepared testimony regarding market power consequences of divestiture of hydroelectric assets, December 5, 2000.

San Diego Gas & Electric Company, *et al*, FERC Docket No. EL00-95: Prepared testimony regarding proposed price mitigation measures on behalf of Pacific Gas and Electric Co., November 22, 2000.

Application of Harbor Cogeneration Company, FERC Docket No. ER99-1248: Affidavit in support of application for market-based rates for energy, capacity and ancillary services, December 1998.

Application of and Complaint of Residential Electric, Incorporated vs. Public Service Company of New Mexico, New Mexico Public Utility Commission Case Nos. 2867 and 2868: Testimony at hearings, November, 1998; Direct Testimony on behalf of Public Service Company of New Mexico on retail access issues, November, 1998.

Management audit of Public Service Electric and Gas' restructuring proposal for the New Jersey Board of Public Utilities: Prepared testimony on reliability and basic generation service, March 1998.

## PUBLISHED ARTICLES

- Forward Capacity Market CONEfusion*, Electricity Journal Vol. 23 Issue 9, November 2010.
- Reconsidering Resource Adequacy (Part 2): Capacity Planning for the Smart Grid*, Public Utilities Fortnightly, May 2010.
- Reconsidering Resource Adequacy (Part 1): Has the One-Day-in-Ten-Years Criterion Outlived Its Usefulness?* Public Utilities Fortnightly, April 2010.
- A Hard Look at Incentive Mechanisms for Natural Gas Procurement*, with K. Costello, National Regulatory Research Institute Report No. 06-15, November 2006.
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Summary: Testimony Direct Testimony of James F. Wilson on Behalf of Office of the Ohio Consumers' Counsel electronically filed by Mrs. Tracy J. Greene on behalf of Michael, William J..