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**PAUL RENNER**  
*Speaker of the House of  
Representatives*

June 6, 2024

Adam J. Teitzman, Commission Clerk  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0850

**Re: Docket No. 20240026 - EI**

Dear Mr. Teitzman,

Please find enclosed for filing in the above referenced docket the Direct Testimony and Exhibits of David E. Dismukes, Ph.D.

If you have any questions or concerns; please do not hesitate to contact me. Thank you for your assistance in this matter.

Sincerely,

Walter Trierweiler  
Public Counsel

/s/ Patricia A. Christensen  
Patricia A. Christensen  
Associate Public Counsel  
Florida Bar No. 0989789

**CERTIFICATE OF SERVICE**  
**DOCKET NO. 20240026-EI**

I **HEREBY CERTIFY** that a true and correct copy of the foregoing has been furnished by electronic mail on this 6<sup>th</sup> day of June, 2024, to the following:

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June 6, 2024

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**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

In Re: Petition for rate increase  
by Tampa Electric Company.

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Docket No. 20240026

FILED: June 6, 2024

**DIRECT TESTIMONY**

**OF**

**DAVID E. DISMUKES, PH.D.**

**ON BEHALF**

**OF**

**THE CITIZENS OF THE STATE OF FLORIDA**

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**DIRECT TESTIMONY**

**OF**

**DAVID E. DISMUKES, PH.D.**

On behalf of the Office of Public Counsel

Before the

Florida Public Service Commission

Docket No. 20240026-EI

1 **I. INTRODUCTION**

2 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

3 A. My name is David E. Dismukes. My business address is 5800 One Perkins Place Drive,  
4 Suite 5-F, Baton Rouge, Louisiana, 70808.

5

6 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

7 A. I am testifying in this proceeding on behalf of the Florida Office of Public Counsel  
8 (“OPC”).

9

10 **Q. WOULD YOU PLEASE STATE YOUR OCCUPATION AND CURRENT**  
11 **PLACE OF EMPLOYMENT?**

12 A. I am a Consulting Economist with the Acadian Consulting Group (“ACG”), a research  
13 and consulting firm that specializes in the analysis of regulatory, economic, financial,  
14 accounting, statistical, and public policy issues associated with regulated and energy

1 industries. ACG is a Louisiana-registered partnership, formed in 1995, and is located  
2 at 5800 One Perkins Place Dr., Suite 5-F, Baton Rouge, Louisiana 70808.

3

4 **Q. DO YOU HOLD ANY ACADEMIC POSITIONS?**

5 A. Yes. I am a professor emeritus at Louisiana State University (“LSU”). Prior to my  
6 retirement in January 2023, I served as a full professor, executive director, and director  
7 of policy analysis at the LSU Center for Energy Studies and as a full tenured professor  
8 in the Department of Environmental Sciences and the director of the Coastal Marine  
9 Institute in the LSU College of the Coast and Environment. I also serve as a senior  
10 fellow at the Institute of Public Utilities at Michigan State University, where I have  
11 taught energy regulatory staff and other utility stakeholders about principles, trends,  
12 and issues in the electric and natural gas industries. I am also a Distinguished Fellow  
13 and Senior Economist with the Institute for Energy Research in Washington, D.C.  
14 Appendix A provides my academic curriculum vitae, which includes a full listing of  
15 my publications, presentations, pre-filed expert witness testimony, expert reports,  
16 expert legislative testimony, and affidavits.

17

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

19 A. I have been retained by OPC to provide an expert opinion to the Florida Public Service  
20 Commission (“Commission”) on load forecasting and energy affordability issues and  
21 how those relate to the current base rate case increase proposed by Tampa Electric  
22 Company (“TECO” or “Company”). My testimony and accompanying exhibits have  
23 been prepared by me or those under my direction and control.



1 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

2 A. Yes. The following exhibits have been prepared in support of my testimony:

- 3 • Exhibit DED-1: Base Revenue Impact,
- 4 • Exhibit DED-2: Out-of-Model Adjustments,
- 5 • Exhibit DED-3: Company Energy Sales and Customer Forecasts,
- 6 • Exhibit DED-4: Revised Sales Forecast based on Ten-Year Trend,
- 7 • Exhibit DED-5: Usage per Customer Utility Survey,
- 8 • Exhibit DED-6: Forecast Variance Analysis, and
- 9 • Exhibit DED-7: Energy Affordability Index.

10

11 **Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?**

12 A. My testimony is organized into the following sections:

- 13 • Section II: Summary of Recommendations,
- 14 • Section III: Load Forecast,
- 15 • Section IV: Energy Affordability, and
- 16 • Section V: Conclusions and Recommendations.

17

18 **II. SUMMARY OF RECOMMENDATIONS**

19 **Q. PLEASE SUMMARIZE YOUR LOAD FORECAST RECOMMENDATION.**

20 A. I recommend the Commission reject the Company's energy sales forecast because it  
21 bears no resemblance to historic trends and is biased due to the introduction of a number  
22 of subjective out-of-model adjustments. Over the past several years, the Company has  
23 consistently prepared sales forecasts that were lower than actuals. I recommend the  
24 Commission accept a conservative, modified version of the Company's forecast that  
25 removes subjective out-of-model adjustments. The removal of out-of-model

1 adjustments will increase the Company's test year sales forecast resulting in a 2025  
2 sales projection of 20,635,457 megawatt-hours. This recommendation, if extended an  
3 additional two years, would support forecasted megawatt-hour sales of 20,886,730 in  
4 2026 and 21,128,190 in 2027.

5  
6 **Q. PLEASE SUMMARIZE THE REVENUE IMPACTS RESULTING FROM**  
7 **YOUR LOAD FORECAST RECOMMENDATION.**

8 A. My recommendation will result in an increase of 2025 test year retail revenues by \$12  
9 million. This recommendation, if extended an additional two years, would support  
10 retail revenue increases of \$20 million in 2026 and \$26 million in 2027. I consider this  
11 to be a conservative recommendation given that the Company's test year forecast has  
12 shown consistent biases (measured by prior forecast variances) from its two prior base  
13 rate case proceedings in 2013 and 2021. The average test year forecast variance in  
14 these two cases was 2.1 percent, which if applied to this case, would result in a retail  
15 revenue increase of \$31 million in 2025, \$37 million in 2026, and \$39 million in 2027.  
16 Furthermore, a forecast aligned with the Company's ten-year historical trend would  
17 result in a retail revenue increase of \$60 million in 2025, \$78 million in 2026, and \$89  
18 million in 2027. Thus, a moderate sales/revenue adjustment which simply excludes  
19 several proposed yet poorly documented out-of-model adjustments, is reasonable. A  
20 summary of these forecasted revenues is provided in Exhibit DED-1.

1 **Q. PLEASE SUMMARIZE YOUR FINDINGS REGARDING ENERGY**  
2 **AFFORDABILITY IN THE COMPANY’S SERVICE TERRITORY.**

3 A. Energy affordability remains a challenging issue in the Company’s service territory.  
4 TECO-specific electricity costs as a share of income remain unaffordable for the  
5 Company’s low-income customers. The consistent march to more and more, and  
6 higher and higher rate requests are keeping affordable rates out of reach for low-income  
7 ratepayers. I recommend the Commission consider energy affordability in this  
8 proceeding, and all future utility base rate proceedings, in evaluating rate increase  
9 requests consistent with the trends in other U.S. regulatory jurisdictions.

10

11 **III. LOAD FORECAST**

12 **A. *TECO’s Forecasting Process***

13 **Q. PLEASE EXPLAIN THE COMPANY’S FORECASTING PROCESS.**

14 A. The Company’s forecasting process involves econometric and end-use models to  
15 determine changes in usage per customer (“UPC”), peak demand, and customer  
16 growth.<sup>1</sup> The product of the UPC and customer forecasts are used to develop a total  
17 energy sales forecast and ultimately a forecast for test year revenues. Each of these  
18 forecasts rely on several economic and demographic variables originating from both  
19 internal and external sources. The results are used in not only in this rate case, but also  
20 in the Company’s planning and budget processes.<sup>2</sup>

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<sup>1</sup> Direct Testimony of Lori Cifuentes at p. 7, lines 15-18.

<sup>2</sup> Direct Testimony of Lori Cifuentes at p. 3, lines 1-6.

1 **Q. PLEASE DISCUSS THE INPUTS USED IN THE COMPANY’S CUSTOMER**  
2 **GROWTH FORECAST.**

3 A. The Company used a variety of variables in developing its customer forecast that  
4 include county population estimates, county employment, and building permits.<sup>3</sup> The  
5 Company’s forecast also relied upon external forecasts conducted by the University of  
6 Florida’s Bureau of Economic and Business Research (“BEBR”) as well as Moody’s  
7 Analytics.<sup>4</sup>

8

9 **Q. PLEASE EXPLAIN THE COMPANY’S STATISTICALLY ADJUSTED END**  
10 **USE (“SAE”) MODEL.**

11 A. The Company’s SAE model is econometric based and estimates UPC.<sup>5</sup> The parameters  
12 for the Company’s SAE model rely primarily on three major types of variables:

- 13 • Those measuring saturation and efficiency trends in end-use equipment;<sup>6</sup>  
14 • Those measuring how economic conditions and prices impact electricity  
15 consumption;<sup>7</sup> and  
16 • Those measuring the impact of weather including the use of heating degree day and  
17 cooling degree day data based on 20-year “normal” weather trends.<sup>8</sup>

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<sup>3</sup> Direct Testimony of Lori Cifuentes at p. 8, lines 9-12.

<sup>4</sup> Direct Testimony of Lori Cifuentes at p. 8, lines 14-19.

<sup>5</sup> Direct Testimony of Lori Cifuentes at p. 9, lines 11-13.

<sup>6</sup> Direct Testimony of Lori Cifuentes at p. 9, lines 14-16.

<sup>7</sup> Direct Testimony of Lori Cifuentes at p. 9, lines 16-22.

<sup>8</sup> Direct Testimony of Lori Cifuentes at p. 9, lines 23-25 and p. 10, lines 1-2.

1 **Q. DID THE COMPANY RELY UPON ANY “OUT-OF-MODEL”**  
2 **ADJUSTMENTS?**

3 A. Yes. The Company relies on three major “out-of-model” adjustments to its sales  
4 forecast that includes: (1) revisions for changes in energy efficiency; (2) revisions for  
5 increases in electric vehicle adoption; and (3) revisions for increases in behind-the-  
6 meter solar installations.<sup>9</sup>

7  
8 **Q. WHAT DO YOU MEAN BY “OUT-OF-MODEL” ADJUSTMENTS?**

9 A. An out-of-model adjustment is an additional, often subjective modification to statistical  
10 model results. These modifications are considered “out-of-model” since they either  
11 modify, change, or disregard the results that are derived from a statistical model, which  
12 in this case, is the Company’s SAE model. Practitioners often make these adjustments  
13 if they feel forecast results are either deficient or not properly informed by their  
14 explanatory (or independent) variables or statistical/mathematical specifications. An  
15 example of an out-of-model adjustment includes those used in the recent past to account  
16 for an unknown and not otherwise experienced change in economic conditions brought  
17 on by the COVID pandemic. These adjustments, while often informed by empirical  
18 data, also included a large degree of subjectivity.

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<sup>9</sup> Minimum Filing Requirement Schedule F-5, p. 6 of 16.

1 **Q. PLEASE EXPLAIN THE COMPANY’S ENERGY EFFICIENCY**  
2 **ADJUSTMENTS.**

3 A. The Company applied separate energy sales adjustments amounting to 93,294  
4 megawatt-hours in 2025 as a reduction to their regression model results.<sup>10</sup> The  
5 adjustments are meant to represent the Demand Side Management (“DSM”) savings  
6 resulting from forecasted growth in program participation and estimated energy savings  
7 per participant. The adjustments were applied to the residential, commercial, and  
8 industrial customer classes.

9  
10 **Q. WHAT SUPPORT DID THE COMPANY PROVIDE FOR THESE ENERGY**  
11 **EFFICIENCY ADJUSTMENTS?**

12 A. As part of their initial filing, the Company did not provide any supporting details on  
13 the various components of its out-of-model adjustments nor did they provide the  
14 assumptions utilized to arrive at their results. The Company simply referenced the  
15 adjustment in testimony<sup>11</sup> and provided a brief description in their supporting filing  
16 schedules.<sup>12</sup> Upon request for more details on the models and their assumptions, the  
17 Company provided the forecasted adjustment results by customer type and month.<sup>13</sup>

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10 Company Response to OPC’s 7th Request for PODs (88-103), Attachment “BS 20063Energy Sales Calculations\_2024-2025”, tab “Conservation”.

11 Direct Testimony of Lori Cifuentes at p. 19, lines 3-6.

12 Minimum Filing Requirement Schedule F-5, p. 6 of 16.

13 Company Response to OPC’s 7th Request for PODs (88-103), Attachment “BS 20063Energy Sales Calculations\_2024-2025”, tab “Conservation”.

1 **Q. DO YOU AGREE WITH THE INCLUSION OF THE COMPANY’S ENERGY**  
2 **EFFICIENCY ADJUSTMENTS INTO THE ENERGY SALES FORECAST?**

3 A. No. The DSM goals that serve as the basis for this adjustment (2025-2034 proposal)  
4 are nearly three times the size as the prior period DSM goals (2020-2029).<sup>14</sup>  
5 Additionally, neither the 2024 nor the 2019 DSM goals proposed by the Company have  
6 been approved by the Commission. In the most recent Commission order regarding  
7 the review of numeric conservation goals, the Commission rejected the Company’s  
8 proposed 2019 goals in favor of the 2014 goals stating, “we find that it is in the public  
9 interest to continue with the goals set in the last FEECA proceeding pursuant to the  
10 2014 Goalsetting Order.”<sup>15</sup> Further, the DSM goals approved by the Commission in  
11 this Order are for 2020 to 2024, and do not include the 2025 test year for the current  
12 case.

13  
14 **Q. PLEASE EXPLAIN THE COMPANY’S ELECTRIC VEHICLE**  
15 **ADJUSTMENTS.**

16 A. The Company applied separate electric vehicle adjustments amounting to 173,285  
17 megawatt-hours in 2025 as an addition to their regression model results.<sup>16</sup> The  
18 adjustments are meant to represent the impact electric vehicle growth will have on  
19 Company load. The forecast relies upon many assumptions including future

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<sup>14</sup> Direct Testimony of Ashley Sizemore at p. 15, lines 16-25.

<sup>15</sup> In re: Commission review of numeric conservation goals (Tampa Electric Company), Order No. PSC-2019-0509-FOF-EG. Issued November 26, 2019.

<sup>16</sup> Company Response to OPC’s 7<sup>th</sup> Request for PODs (88-103), Attachment “BS 20063Energy Sales Calculations\_2024-2025”, tab “EV”.

1 penetration levels, the average number of miles driven per year, the weighted average  
2 battery size, and the number of charges per year.<sup>17</sup> The adjustments were applied to  
3 the residential and commercial customer classes.

4

5 **Q. WHAT SUPPORT DID THE COMPANY PROVIDE FOR THESE ELECTRIC**  
6 **VEHICLE ADJUSTMENTS?**

7 A. As part of their initial filing, the Company did not provide the supporting details on  
8 this out-of-model adjustment, nor did they provide the numerical assumptions made to  
9 calculate their results. The Company simply referenced the adjustment in testimony<sup>18</sup>  
10 and provided a brief description in their supporting filing schedules.<sup>19</sup> Upon request  
11 for more modeling details and assumptions, the Company merely provided the  
12 forecasted adjustment results by customer type and month.<sup>20</sup>

13

14 **Q. DO YOU AGREE WITH THE INCLUSION OF THE COMPANY'S ELECTRIC**  
15 **VEHICLE ADJUSTMENTS INTO THE ENERGY SALES FORECAST?**

16 A. No. While many energy analysts anticipate that all utilities will face increasing electric  
17 vehicles sales over the next several years, the Company has failed to provide the  
18 supporting evidence necessary to prove their out-of-model adjustment for electric  
19 vehicle growth is reasonable. An understatement of these sales, for instance, could

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<sup>17</sup> Minimum Filing Requirement Schedule F-5, p. 6 of 16.

<sup>18</sup> Direct Testimony of Lori Cifuentes at p. 19, lines 17-18.

<sup>19</sup> Minimum Filing Requirement Schedule F-5, p. 6 of 16.

<sup>20</sup> Company Response to OPC's 7<sup>th</sup> Request for PODs (88-103), Attachment "BS 20063Energy Sales Calculations\_2024-2025", tab "EV".



1 have important implications for test year revenue results. To date, the Company has  
2 simply failed to meet its burden of proof regarding the sales adjustments.

3

4 **Q. PLEASE EXPLAIN THE COMPANY’S SOLAR ENERGY ADJUSTMENTS.**

5 A. The Company applied separate solar energy adjustments amounting to 249,449  
6 megawatt-hours in 2025 as a reduction to their regression model results.<sup>21</sup> These  
7 particular out-of-model adjustments are meant to estimate how behind the meter solar  
8 generation impacts future load. The model relies upon assumptions regarding future  
9 penetration levels and the impact of each installation.<sup>22</sup> The adjustments were applied  
10 to the residential and commercial customer classes.

11

12 **Q. WHAT SUPPORT DID THE COMPANY PROVIDE FOR THESE SOLAR**  
13 **ENERGY ADJUSTMENTS.**

14 A. As part of their initial filing, the Company did not provide the supporting details on  
15 this out-of-model adjustment, nor did they provide the numerical assumptions made to  
16 calculate their results. The Company simply referenced the adjustment in testimony<sup>23</sup>  
17 and provided a brief description in their supporting filing schedules.<sup>24</sup> Upon request  
18 for more details on the underlying assumptions and how these solar adjustments were  
19 modeled, the Company merely provided the forecasted adjustment results by customer

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<sup>21</sup> Company Response to OPC’s 7<sup>th</sup> Request for PODs (88-103), Attachment “BS 20063Energy Sales Calculations\_2024-2025”, tab “PV”.

<sup>22</sup> Minimum Filing Requirement Schedule F-5, p. 6 of 16.

<sup>23</sup> Direct Testimony of Lori Cifuentes at p. 19, lines 11-12.

<sup>24</sup> Minimum Filing Requirement Schedule F-5, p. 6 of 16.

1 type and month.<sup>25</sup> Again, the Company has failed to provide the supporting evidence  
2 and proper documentation necessary to prove their out-of-model adjustment for solar  
3 growth is reasonable. An overstatement in the loss of sales, for instance, could have a  
4 significant impact on test year revenue results. To introduce a number of additional  
5 assumptions on top of the assumptions already made in the statistical model adds  
6 another level of uncertainty to the Company’s load forecasting results. Given the  
7 immense size of this particular adjustment, the impact of introducing more uncertainty  
8 into the model raises the potential for adverse results. To date, the Company has simply  
9 failed to meet its burden of proof regarding the solar-energy based sales adjustments.

10

11 **Q. HOW LARGE ARE THE COMPANY’S COLLECTIVE OUT-OF-MODEL**  
12 **ADJUSTMENTS?**

13 A. Collectively, the Company’s three out-of-model adjustments reduce their test year  
14 energy sales by 169,457 megawatt-hours. The individual and collective impacts of  
15 these adjustments are shown on Exhibit DED-2. These adjustments are part of a  
16 broader conclusion proposed by the Company that despite serving customers residing  
17 in one of the fastest growing regions of one of the fastest growing states, a decline in  
18 energy sales should be expected. This conclusion is completely inconsistent with past  
19 and currently expected trends. Not only is the state experiencing tremendous growth,  
20 but Tampa has also been among the top ten metro regions in the country at attracting

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<sup>25</sup> Company Response to OPC’s 7<sup>th</sup> Request for PODs (88-103), Attachment “BS 20063Energy Sales Calculations\_2024-2025”, tab “PV”.

1 new residents.<sup>26</sup> The Company has maintained consistent growth over the past decade  
2 and shows few signs of reversing course in the manner suggested by the Company’s  
3 forecast. I will discuss how the Company’s forecast differs from these trends in the  
4 following subsection of my testimony.

5  
6 ***B. Company Forecast Inconsistencies with Historic Trends***

7 **Q. HOW DOES THE COMPANY’S SALES FORECAST COMPARE TO ITS**  
8 **PRIOR HISTORIC TRENDS?**

9 A. The Company forecasts a two percent sales decrease from 2023 to its 2025 test year<sup>27</sup>  
10 while customers are forecasted to increase by three percent.<sup>28</sup> The divergence between  
11 these two forecasts is contradictory. Consider that the Company’s forecasts suggest  
12 that end-use reductions in UPC will be far larger than all the new incremental load  
13 added to the Company’s system due to new customer growth. Exhibit DED-3 shows  
14 the Company’s historic sales, customer, and UPC trends compared to its proposed  
15 forecast. The analysis decomposes changes in usage attributable to existing customers  
16 (efficiency changes) and new customers (growth changes). The forecast for 2024  
17 shows the large decreases in UPC from existing customers are forecasted to be over  
18 two times larger in absolute value than usage changes attributable to new customer  
19 growth. Such an outcome has not happened since 2011 when the state was still reeling  
20 from the aftermath of the 2008 to 2009 recession.

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<sup>26</sup> Kristie Wilder and Paul Mackun, “Sunshine State Home to Metro Areas Among Top 10 U.S. Population Gainers From 2022 to 2023,” Census Bureau, 2024.

<sup>27</sup> Direct Testimony of Lori Cifuentes, Exhibit LC-1, Document No. 7.

<sup>28</sup> Direct Testimony of Lori Cifuentes, Exhibit LC-1, Document No. 5.

1 **Q. ARE THE COMPANY'S SALES PROJECTIONS CONSISTENT WITH**  
2 **HISTORICAL TRENDS?**

3 A. No. The Company is projecting a sales decrease for the test year (and subsequent years)  
4 despite the fact that sales have steadily increased at an annualized rate of 1.2 percent  
5 from 2013 to 2023. In fact, over this historical period, sales grew for nine out of ten  
6 years and never experienced a decline over two years which is what the Company  
7 proposes the Commission accept in this proceeding to develop test year revenues.  
8 Moreover, the projected decrease from 2023 to 2024 would be larger than anything  
9 experienced during the most recent ten-year historical period. The Company's forecast  
10 sales decrease (476 GWh) is almost ten times larger than the only single decrease that  
11 has been reported over the past decade (i.e., 2017) and three times larger than the  
12 average annual decrease experienced from 2008 to 2012 during and immediately after  
13 the 2008 to 2009 recession. Exhibit DED-4 provides a chart comparing the Company's  
14 current forecast to a historic trend-based projection of ten-year sales. The difference  
15 between the two series is substantial and shows just how inconsistent the Company's  
16 sales forecast is with historic trends on a forward-going basis.

17  
18 **Q. ARE THE COMPANY'S UPC PROJECTIONS CONSISTENT WITH**  
19 **HISTORICAL TRENDS?**

20 A. No. UPC declined by 0.6 percent on an annual average basis between 2013 and 2023  
21 in direct contradiction to the Company's forecast which estimates a very large and steep  
22 3.9 percent decline in 2024. In other words, much of the Company's test year

1 projection hinges on their prediction that UPC will decrease at over six times the ten-  
2 year historic rate.

3

4 **Q. IS THIS A LARGE DECREASE IN FORECAST UPC?**

5 A. Yes. I have examined the changes in total company UPC for all southeastern investor-  
6 owned utilities going back to before the last recession from 2009 to 2022. This includes  
7 166 utilities over 14 years for a total of 2,324 observations. The results are shown on  
8 Exhibit DED-5. In the most recent year only 7 utilities (4 percent) have seen an annual  
9 UPC decrease that equals or exceeds the UPC forecasted by the Company in this  
10 proceeding. Of those utilities, none were located in Florida or what could be considered  
11 a “growth” state comparable to Florida. The UPC projection made by the Company is  
12 more comparable to 2009 during the recession when 56 percent of utilities experienced  
13 an annual UPC decrease of an equal or greater magnitude. However, even during the  
14 2009 recession, the average UPC decrease was 3.5 percent, lower than the Company’s  
15 current projection.

16

17 **Q. DOES THE COMPANY HAVE A HISTORY OF UNDERSTATING ITS LOAD**  
18 **FORECASTS?**

19 A. Yes. The variance analysis contained in Exhibit DED-6 compares the Company’s  
20 actual energy sales and customers from 2013 to 2023 to the forecasted energy sales and  
21 customers presented in the 2021 and 2013 rate cases. The results point to an  
22 unequivocal bias in the Company’s forecasts understating sales, customer, and UPC  
23 projections in every single year. For example, the Company’s 2021 energy sales

1 forecast of 19,972 GWh for 2023 was four percent (or 819 GWh) lower than the 20,791  
2 GWh of actual sales. The Commission should observe that these variances are not  
3 randomly distributed over and beyond actual values but are consistently understating  
4 forecast usage and UPC. The fact that forecasted sales have been lower than actual  
5 sales in every year over the past decade raises serious questions about the reliability  
6 and integrity of the forecasts.

7

8 ***C. Recommendations Regarding the Company's Load Forecasts***

9 **Q. PLEASE SUMMARIZE YOUR LOAD FORECAST RECOMMENDATION.**

10 A. I recommend the Commission reject the Company's energy sales forecast because it  
11 bears no resemblance to historic trends and is biased due to the introduction of a number  
12 of subjective out-of-model adjustments. Over the past several years, the Company has  
13 consistently prepared sales forecasts that were lower than actuals. I recommend the  
14 Commission accept a conservative, modified version of the Company's forecast that  
15 removes subjective out-of-model adjustments. The removal of out-of-model  
16 adjustments will increase the Company's test year sales forecast resulting in a 2025  
17 sales projection of 20,635,457 megawatt-hours. This recommendation, if extended an  
18 additional two years, would support forecasted megawatt-hour sales of 20,886,730 in  
19 2026 and 21,128,190 in 2027.

1 **Q. PLEASE SUMMARIZE THE REVENUE IMPACTS RESULTING FROM**  
2 **YOUR LOAD FORECAST RECOMMENDATION.**

3 A. My recommendation will result in an increase of 2025 test year retail revenues by \$12  
4 million. This recommendation, if extended an additional two years, would support  
5 retail revenue increases of \$20 million in 2026 and \$26 million in 2027. I consider this  
6 to be a conservative recommendation given that the Company’s test year forecast has  
7 shown consistent biases (measured by prior forecast variances) from its two prior base  
8 rate case proceedings in 2013 and 2021. The average test year forecast variance in  
9 these two cases was 2.1 percent, which if applied to this case, would result in a retail  
10 revenue increase of \$31 million in 2025, \$37 million in 2026, and \$39 million in 2027.  
11 Furthermore, a forecast aligned with the Company’s ten-year historical trend would  
12 result in a retail revenue increase of \$60 million in 2025, \$78 million in 2026, and \$89  
13 million in 2027. Thus, a moderate sales/revenue adjustment which simply excludes  
14 several proposed yet poorly documented out-of-model adjustments, is reasonable.

15

16 **IV. ENERGY AFFORDABILITY**

17 **Q. HOW DO YOU DEFINE ENERGY AFFORDABILITY?**

18 A. While there is no universally accepted definition of energy affordability, it is typically  
19 examined within the context of how expensive energy is relative to household  
20 income.<sup>29</sup> Affordability, more generally, can be utilized as an index number to

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<sup>29</sup> See, “Understanding Energy Affordability” ACEEE, 2015, p. 1.

1 measure, among other things, the ability of a specific type of household to pay for  
2 essential utility services such as water, electric, and/or natural gas.

3

4 **Q. ARE THERE ANY THRESHOLDS AT WHICH ENERGY SIMPLY BECOMES**  
5 **“UNAFFORDABLE” OR “BURDENSOME?”**

6 A. Yes. The most accepted and utilized threshold at which utilities, and thus energy,  
7 becomes unaffordable or burdensome is when the percentage of income spent on  
8 energy exceeds six percent.<sup>30</sup> This threshold comes from the Fisher, Sheehan, and  
9 Colton’s Home Energy Affordability Gap Study from 2011. The threshold is based on  
10 the premise that total shelter costs (including rent/mortgage and all utilities) should not  
11 exceed 30 percent of income and that 20 percent of shelter costs should be allocated to  
12 energy bills. Thus, 20 percent of 30 percent yields a six percent affordable utility  
13 burden.<sup>31</sup> Utility burdens below six percent are classified as “affordable,” and energy  
14 burdens above six percent are classified as “unaffordable.”

15

16 **Q. HOW DOES ACADEMIC LITERATURE EXAMINE UTILITY**  
17 **AFFORDABILITY?**

18 A. The academic literature examines energy affordability through various metrics but  
19 predominantly through utility and energy burden rates. Utility burden rates measure  
20 the impact of a utility bill on household income. The American Council for an Energy  
21 Efficient Economy (ACEEE)’s *Understanding Energy Affordability* Report best

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<sup>30</sup> See, “Understanding Energy Affordability” ACEEE, 2015, p. 2.

<sup>31</sup> Fisher, Sheehan, and Colton. “Home Energy Affordability in New York: The Affordability Gap 2008-2010”, June 2011, p. 2.



1 encapsulates what academicians have studied. ACEEE’s report determines four drivers  
2 of high energy burdens: (1) physical (i.e. housing age and type, poor insulation, weather  
3 extremes); (2) economic (i.e. chronic or sudden economic hardship); (3) behavioral  
4 (lack of access to information for bill payment assistance); and (4) policy (insufficient  
5 programs for bill assistance, high fixed customer charges).<sup>32</sup> It also examines utility  
6 burden rates throughout the United States, classifying any total utility burden above six  
7 percent as a household that experiences a high energy burden.<sup>33</sup>

8

9 **Q. HOW IS THE CONCEPT OF ENERGY AFFORDABILITY RECOGNIZED IN**  
10 **REGULATION AND PUBLIC POLICY?**

11 A. Energy affordability is increasingly becoming an important regulatory policy  
12 consideration with various states and local governments now setting energy  
13 affordability targets. Recently, New York set a state-wide goal of achieving a six  
14 percent energy burden.<sup>34</sup> The City of Portland, Oregon, released a Ten-Year Plan to  
15 Reduce Energy Burden in Oregon Affordable Housing.<sup>35</sup> The California Public  
16 Utilities Commission (“CPUC”) developed the state’s first energy affordability metric  
17 that tracks affordability for essential services (electric, gas, water, and  
18 communications).<sup>36</sup> The Pennsylvania Public Utility Commission (“PPUC”) examined

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<sup>32</sup> “Understanding Energy Affordability” ACEEE, 2015, p. 2.

<sup>33</sup> *Id.*, at p. 3.

<sup>34</sup> “Understanding and Alleviating Energy Cost Burden in New York City,” (August 2019) NYC Mayor’s Office of Sustainability and the Mayor’s Office for Economic Opportunity, at p. 2.

<sup>35</sup> “Reducing the Energy Burden in Oregon Affordable Housing – Ten-year Plan,” (2018), Built Environment Energy Working Group.

<sup>36</sup> California Public Utilities Commission Order 18-07-006, 2018.

1 home energy burdens for low-income Pennsylvanians in its Home Energy Affordability  
2 2019 report<sup>37</sup> and subsequently issued a policy statement on March 21, 2020,  
3 establishing maximum energy burdens for customers.<sup>38</sup> These examples demonstrate  
4 that examining energy affordability has become paramount in utility regulation across  
5 the country.

6

7 **Q. DO LOW INCOME HOUSEHOLDS SPEND PROPORTIONATELY MORE IN**  
8 **ELECTRICITY THAN HIGHER INCOME HOUSEHOLDS?**

9 A. Yes. Lower income households spend a larger share of their income on electricity than  
10 higher income households. In other words, while households consume more electricity  
11 as income increases, the share of their income they spend on electricity decreases as  
12 their income increases.

13

14 **Q. HAVE YOU ESTIMATED ENERGY AFFORDABILITY USING THE**  
15 **COMPANY'S PROPOSED RESIDENTIAL RATES?**

16 A. Yes. Exhibit DED-7 presents residential Energy Affordability Index estimates at both  
17 the 15<sup>th</sup> and 20<sup>th</sup> income percentiles. This analysis finds that the 15<sup>th</sup> percentile index  
18 is already greater than six percent, indicating a significant level of energy burden for  
19 the lowest income bracket. Moreover, energy is expected to remain unaffordable for  
20 this income bracket as rates are increased again in 2025.

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<sup>37</sup> Exhibit OPC (A)-24, Home Energy Affordability for Low-Income Customers in Pennsylvania, (January 2019) Pennsylvania Public Utility Commission.

<sup>38</sup> 52 PA. Code Ch. 69.

1 **Q. ARE YOU AWARE THE COMPANY HAS PROPOSED A PROGRAM FOR**  
2 **LOW INCOME SENIOR CITIZENS?**

3 A. Yes, it is my understanding that the Company is proposing a senior citizen low-income  
4 program that offers a fixed \$10 monthly bill credit for its senior customers who are  
5 sixty-five years old or older.<sup>39</sup> This would seem to tacitly acknowledge there is an  
6 affordability issue with the Company's rates for its low-income customers.

7  
8 **Q. WHAT DO THESE FINDINGS MEAN FOR THE COMPANY'S PROPOSAL?**

9 A. Energy affordability remains a challenging issue in the Company's service territory.  
10 TECO-specific electricity costs as a share of income remain unaffordable for the  
11 Company's low-income customers. The consistent march to more and more, and  
12 higher and higher rate requests are keeping affordable rates out of reach for low-income  
13 ratepayers. I recommend the Commission consider energy affordability in this  
14 proceeding, and all future utility base rate proceedings, in evaluating rate increase  
15 requests consistent with the trends in other U.S. regulatory jurisdictions.

16  
17 **V. CONCLUSIONS AND RECOMMENDATIONS**

18 **Q. PLEASE SUMMARIZE YOUR LOAD FORECAST RECOMMENDATION.**

19 A. I recommend the Commission reject the Company's energy sales forecast because it  
20 bears no resemblance to historic trends and is biased due to the introduction of a number  
21 of subjective out-of-model adjustments. Over the past several years, the Company has

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<sup>39</sup> Direct Testimony of Jordan Williams at p. 46, lines 11-25 and p. 47, lines 1-20.

1 consistently prepared sales forecasts that were lower than actuals. I recommend the  
2 Commission accept a conservative, modified version of the Company's forecast that  
3 removes subjective out-of-model adjustments. The removal of out-of-model  
4 adjustments will increase the Company's test year sales forecast resulting in a 2025  
5 sales projection of 20,635,457 megawatt-hours. This recommendation, if extended an  
6 additional two years, would support forecasted megawatt-hour sales of 20,886,730 in  
7 2026 and 21,128,190 in 2027.

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9 **Q. PLEASE SUMMARIZE THE REVENUE IMPACTS RESULTING FROM**  
10 **YOUR LOAD FORECAST RECOMMENDATION.**

11 A. My recommendation will result in an increase of 2025 test year retail revenues by \$12  
12 million. This recommendation, if extended an additional two years, would support  
13 retail revenue increases of \$20 million in 2026 and \$26 million in 2027. I consider this  
14 to be a conservative recommendation given that the Company's test year forecast has  
15 shown consistent biases (measured by prior forecast variances) from its two prior base  
16 rate case proceedings in 2013 and 2021. The average test year forecast variance in  
17 these two cases was 2.1 percent, which if applied to this case, would result in a retail  
18 revenue increase of \$31 million in 2025, \$37 million in 2026, and \$39 million in 2027.  
19 Furthermore, a forecast aligned with the Company's ten-year historical trend would  
20 result in a retail revenue increase of \$60 million in 2025, \$78 million in 2026, and \$89  
21 million in 2027. Thus, a moderate sales/revenue adjustment which simply excludes  
22 several proposed yet poorly documented out-of-model adjustments, is reasonable.

1 **Q. PLEASE SUMMARIZE YOUR FINDINGS REGARDING ENERGY**  
2 **AFFORDABILITY IN THE COMPANY’S SERVICE TERRITORY.**

3 A. Energy affordability remains a challenging issue in the Company’s service territory.  
4 TECO-specific electricity costs as a share of income remain unaffordable for the  
5 Company’s low-income customers. The consistent march to more and more, and  
6 higher and higher rate requests are keeping affordable rates out of reach for low-income  
7 ratepayers. I recommend the Commission consider energy affordability in this  
8 proceeding, and all future utility base rate proceedings, in evaluating rate increase  
9 requests consistent with the trends in other U.S. regulatory jurisdictions.

10

11 **Q. DO YOU RESERVE YOUR RIGHT TO SUPPLEMENT YOUR TESTIMONY**  
12 **IF NEW INFORMATION BECOMES AVAILABLE?**

13 A. Yes. I reserve the right to supplement my testimony if material new information  
14 becomes available.

15

16 **Q. DOES THIS COMPLETE YOUR PREFILED DIRECT TESTIMONY?**

17 A. Yes, at this time. However, the compressed procedural schedule in this proceeding for  
18 filing Intervenor testimony has limited the time to complete OPC’s investigation into  
19 the issues and effects of those issues on the Company’s petition. Consequently, it is  
20 my understanding that OPC reserves the right to file supplemental testimony to fully  
21 address these issues and effects of those issues, if necessary.

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**EDUCATION**

Ph.D., Economics, Florida State University, 1995.  
M.S., Economics, Florida State University, 1992.  
M.S., International Affairs, Florida State University, 1988.  
B.A., History, University of West Florida, 1987.  
A.A., Liberal Arts, Pensacola State College, 1985.

Master's Thesis: *Nuclear Power Project Disallowances: A Discrete Choice Model of Regulatory Decisions*

Ph.D. Dissertation: *An Empirical Examination of Environmental Externalities and the Least-Cost Selection of Electric Generation Facilities*

**ACADEMIC APPOINTMENTS**

Louisiana State University, Baton Rouge, Louisiana

**Center for Energy Studies**

2023-Current	Professor Emeritus
2014-2023	Executive Director (Retired in 2023)
2007-2023	Director, Division of Policy Analysis
2006-2023	Professor
2003-2014	Associate Executive Director
2001-2006	Associate Professor
1999-2001	Research Fellow and Adjunct Assistant Professor
1995-2000	Assistant Professor

**College of the Coast and the Environment (Department of Environmental Studies)**

2014-2023	Professor (Joint Appointment with CES)
2010-2023	Director, Coastal Marine Institute
2010-2014	Adjunct Professor

**E.J. Ourso College of Business Administration (Department of Economics)**

2006-2023	Adjunct Professor
2001-2006	Adjunct Associate Professor
1999-2000	Adjunct Assistant Professor

Michigan State University, East Lansing, Michigan

**Institute of Public Utilities**

2018-Current                      Senior Fellow

Florida State University, Tallahassee, Florida

**College of Social Sciences, Department of Economics**

1995                                      Instructor

**PROFESSIONAL EXPERIENCE**

Acadian Consulting Group, Baton Rouge, Louisiana

2001-Current                      Consulting Economist/Principal

1995-1999                          Consulting Economist/Principal

Econ One Research, Inc., Houston, Texas

1999-2001                          Senior Economist

Florida Public Service Commission, Tallahassee, Florida

**Division of Communications, Policy Analysis Section**

1995                                      Planning & Research Economist

**Division of Auditing & Financial Analysis, Forecasting Section**

1993                                      Planning & Research Economist

1992-1993                          Economist

Project for an Energy Efficient Florida/FlaSEIA, Tallahassee, Florida

1994                                      Energy Economist

Ben Johnson Associates, Inc., Tallahassee, Florida

1991-1992                          Research Associate

1989-1991                          Senior Research Analyst

1988-1989                          Research Analyst

**GOVERNMENT & ADVISORY APPOINTMENTS**

2023 – Current                      Distinguished Fellow & Senior Economist  
Institute For Energy Research  
Washington, D.C.

2017 -- Current                      Member, National Petroleum Council.  
U.S. Department of Energy.

2020-2023                          Co-Chairperson, Energy Advisory Committee, World Trade Center  
New Orleans, Louisiana.

2007-2023                          Louisiana Representative, Interstate Oil and Gas Compact  
Commission; Energy Resources, Research & Technology  
Committee.

2007-2023	Louisiana Representative, University Advisory Board Representative; Energy Council (Center for Energy, Environmental and Legislative Research).
2005	Member, Task Force on Energy Sector Workforce and Economic Development (HCR 322).
2003-2005	Member, Energy and Basic Industries Task Force, Louisiana Economic Development Council
2001-2003	Member, Louisiana Comprehensive Energy Policy Commission.

#### **PUBLICATIONS: BOOKS AND MONOGRAPHS**

1. *Energy and Environment: The Grand Challenges of 21<sup>st</sup> Century*. (2022). With Chris F. D’Elia and Bryan F. Snyder. New York: Kendell Hunt Publishers. Pp. 153.
2. *Power System Operations and Planning in a Competitive Market*. (2002). With Fred I. Denny. New York: CRC Press. Pp. 133.
3. *Distributed Energy Resources: A Practical Guide for Service*. (2000). With Ritchie Priddy. London: Financial Times Energy. Pp. 60.

#### **PUBLICATIONS: PEER REVIEWED ACADEMIC JOURNALS**

1. “Anticipating and Adapting to the Future Impacts of Climate Change on the Health, Security, and Welfare of Low Elevation Coastal Zone (LECZ) Communities in Southeastern USA” (2021). With Thomas Allen, Joshua Behr, Anamaria Bukvic, Ryan S.D. Calder, Kiki Caruson, Charles Connor, Christopher D’Elia, Robin Ersing, Rima Franklin, Jesse Goldstein, Jonathon Goodall, Scott Hemmerling, Jennifer Irish, Steven Lazarus, Derek Loftis Mark Luther, Leigh McCallister, Karen McGlathery, Molly Mitchell, William Moore, Carhles Reid Nichols, Karinna Nunez, Matthew Reidenbach, Julie Shortridge, Robert Weisberg, Robert Weiss, Lynn Donelson Wright, Meng Xia, Kehui Xu, Donald Young, Gary Zarillo, and Julie C. Zinnert. *Journal of Marine Science and Engineering*. 9 (11) 1196.
2. “The Potential Impact of the U.S. Carbon Capture and Storage Tax Credit Expansion on the Economic Feasibility of Industrial Carbon Capture and Storage” (2021). With Brittany Tarufelli and Brian Snyder. *Energy Policy*. Vol. 149.
3. “Current Trends and Issues in Reforming State-level Solar Net Energy Metering Policies.” (2020). *Journal of Energy Law and Resources*. Vol. VIII: 419-451.
4. “A cash flow model of an integrated industrial CCS-EOR project in a petrochemical corridor: a case study in Louisiana.” (2019). With Brian Snyder and Michael Layne. *International Journal of Greenhouse Gas Control*. 93(08).
5. “Understanding the challenges of industrial carbon capture and storage: An example in a U.S. petrochemical corridor.” (2019). With Michael Layne and Brian Snyder. *International Journal of Sustainable Energy* 38(1):13-23.
6. “Understanding the Mississippi River Delta as a coupled natural-human system: research methods, challenges, and prospects. (2018). With Nina S.N. Lam, Y. Jun Xu, Kam-Biu Liu, Margaret Reams, R. Kelly Pace, Yi Qiang, Siddhartha Narra, Kenan Li, Thomas Blanchette, Heng Cei, Lei Zou, and Volodymyr Mihunov. *Water*. 10(8).



7. “Understanding the challenges of industrial carbon capture and storage: an example in a U.S. petrochemical corridor.” (2018). With Brian Snyder and Michael Layne. *International Journal of Sustainable Energy*. 38(1):1-11
8. “Sea level rise and coastal inundation: a case study of the Gulf Coast energy infrastructure.” (2018). With Siddhartha Narra. *Natural Resources*. 9: 150-174.
9. “The energy pillars of society: perverse interactions among human resource use, the economy and environmental degradation.” (2018). With Adrian R.H. Wiegman, John W. Day, Christopher F. D’Elia, Jeffrey S. Rutherford, Charles Hall. *BioPhysical Economics and Resource Quality*. 3(2) 1-16.
10. “Modeling the impacts of sea-level rise, oil price, and management strategy on the costs of sustaining Mississippi delta marshes with hydraulic dredging.” (2018). with Adrian R.H. Wiegman, John W. Day, Christopher F. D’Elia, Jeffrey S. Rutherford, James T. Morris, Eric D. Roy, Robert R. Lane, and Brian F. Snyder. *Science of the Total Environment* 618 (2018): 1547-1559.
11. “Identifying Vulnerabilities of Working Coasts Supporting Critical Energy Infrastructure.” (2016). With Siddhartha Narra. *Water*. 8(1).
12. “Economies of Scale, Learning Effects and Offshore Wind Development Costs” (2015). With Gregory B. Upton, Jr. *Renewable Energy*. 61-66.
13. “Economic impact of Gulf of Mexico ecosystem goods and services and integration into restoration decision-making.” (2014) With Shepard, A.N., J.F. Valentine, C.F. D’Elia, D.W. Yoskowitz. *Gulf Science*.
14. “An Empirical Analysis of Differences in Interstate Oil and Natural Gas Drilling Activity.” (2012). With Mark J. Kaiser and Christopher J. Peters. *Exploration & Production: Oil and Gas Review*. 30(1): 18-22.
15. “The Value of Lost Production from the 2004-2005 Hurricane Seasons in the Gulf of Mexico.” (2009). With Mark J. Kaiser and Yunke Yu. *Journal of Business Valuation and Economic Loss Analysis*. 4(2).
16. “Estimating the Impact of Royalty Relief on Oil and Gas Production on Marginal State Leases in the US.” (2006). With Jeffrey M. Burke and Dmitry V. Mesyanzhinov. *Energy Policy* 34(12): 1389-1398.
17. “Using Competitive Bidding As A Means of Securing the Best of Competitive and Regulated Worlds.” (2004). With Tom Ballinger and Elizabeth A. Downer. *NRRI Journal of Applied Regulation*. 2 (November): 69-85. (Received 2005 Best Paper Award by NRRI).
18. “Deregulation of Generating Assets and the Disposition of Excess Deferred Federal Income Taxes.” (2004). With K.E. Hughes II. *International Energy Law and Taxation Review*. 10 (October): 206-212.
19. “Reflections on the U.S. Electric Power Production Industry: Precedent Decisions Vs. Market Pressures.” (2003). With Robert F. Cope III and John W. Yeargain. *Journal of Legal, Ethical, and Regulatory Issues*. Volume 6, Number 1.
20. “A is for Access: A Definitional Tour Through Today’s Energy Vocabulary.” (2001) *Public Resources Law Digest*. 38: 2.
21. “A Comment on the Integration of Price Cap and Yardstick Competition Schemes in Electrical

- Distribution Regulation.” (2001). With Steven A. Ostrover. *IEEE Transactions on Power Systems*. 16 (4): 940 -942.
22. “Modeling Regional Power Markets and Market Power.” (2001). With Robert F. Cope. *Managerial and Decision Economics*. 22:411-429.
  23. “A Data Envelopment Analysis of Levels and Sources of Coal Fired Electric Power Generation Inefficiency” (2000). With Williams O. Olatubi. *Utilities Policy*. 9 (2): 47-59.
  24. “Cogeneration and Electric Power Industry Restructuring” (1999). With Andrew N. Kleit. *Resource and Energy Economics*. 21:153-166.
  25. “Capacity and Economies of Scale in Electric Power Transmission” (1999). With Robert F. Cope and Dmitry Mesyanzhinov. *Utilities Policy* 7: 155-162.
  26. “Oil Spills, Workplace Safety, and Firm Size: Evidence from the U.S. Gulf of Mexico OCS.” (1997). With O. O. Iledare, A. G. Pulsipher, and Dmitry Mesyanzhinov. *Energy Journal* 4: 73-90.
  27. “A Comment on Cost Savings from Nuclear Regulatory Reform” (1997). *Southern Economic Journal*. 63:1108-1112.
  28. “The Demand for Long Distance Telephone Communication: A Route-Specific Analysis of Short-Haul Service.” (1996). *Studies in Economics and Finance* 17:33-45.

#### **PUBLICATIONS: PEER REVIEWED PROCEEDINGS**

1. “Hydraulic Fracturing: A Look at Efficiency and the Environmental Effects of Fracking” (2014). With Emily C. Jackson. *Environmental Science and Technology: Proceedings from the 7<sup>th</sup> International Conference on Environmental Science and Technology*. Volume 1 of 2: edited by George A. Sorial and Jihua Hong. (Houston, TX: American Science Press, ISBN: 978-0976885368): 42-46.
2. “Economic and Policy Issues in Sustaining an Adequate Oil Spill Contingency Fund in the Aftermath of a Catastrophic Incident.” (2014). With Stephen R. Barnes and Gregory B. Upton. *Proceedings of the Thirty-seventh AMOP Technical Seminar on Environmental Contamination and Response*. June: 506-524.
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5. “Applications for Distributed Energy Resources in Oil and Gas Production: Methods for Reducing Flare Gas Emissions and Increasing Generation Availability” (2000). With Ritchie D. Priddy. *Proceedings of the International Energy Foundation – ENERGEX 2000*. July.
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7. “New Paradigms for Power Engineering Education.” (1997). With Fred I. Denny. *Proceedings of the International Association of Science and Technology for Development*. October: 499-504.

8. "Safety Regulations, Firm Size, and the Risk of Accidents in E&P Operations on the Gulf of Mexico Outer Continental Shelf" (1996). With Allan Pulsipher, Omowumi Iledare, and Bob Baumann. *Proceedings of the American Society of Petroleum Engineers: Third International Conference on Health, Safety, and the Environment in Oil and Gas Exploration and Production*, June.
9. "Comparing the Safety and Environmental Records of Firms Operating Offshore Platforms in the Gulf of Mexico." (1996). With Allan Pulsipher, Omowumi Iledare, Dmitry Mesyanzhinov, William Daniel, and Bob Baumann. *Proceedings of the American Society of Mechanical Engineers: Offshore and Arctic Operations 1996*, January.

#### **PUBLICATIONS: OTHER SCHOLARLY PROCEEDINGS**

1. "A Collaborative Investigation of Baseline and Scenario Information for Environmental Impact Statements" (2005). *Proceedings of the 23<sup>rd</sup> Annual Information Technology Meetings*. U.S. Department of the Interior, Minerals Management Service, Gulf Coast Region, New Orleans, LA. January 12, 2005.
2. "Trends and Issues in the Natural Gas Industry and the Development of LNG: Implications for Louisiana." (2004) *Proceedings of the 51<sup>st</sup> Mineral Law Institute*, Louisiana State University, Baton Rouge, LA. April 2, 2004.
3. "Competitive Bidding in the Electric Power Industry." (2003). *Proceedings of the Association of Energy Engineers*. December 2003.
4. "The Role of ANS Gas on Southcentral Alaskan Development." (2002). With William Nebesky and Dmitry Mesyanzhinov. *Proceedings of the International Association for Energy Economics: Energy Markets in Turmoil: Making Sense of It All*. October.
5. "A New Consistent Approach to Modeling Regional Economic Impacts of Offshore Oil and Gas Activities." (2002). With Vicki Zatarain. *Proceedings of the 2002 National IMPLAN Users Conference*: 241-258.
6. "Analysis of the Economic Impact Associated with Oil and Gas Activities on State Leases." (2002). With Dmitry Mesyanzhinov, Robert H. Baumann, and Allan G. Pulsipher. *Proceedings of the 2002 National IMPLAN Users Conference*: 149-155.
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### **GRANT RESEARCH**

1. *Co-Principal Investigator* (2022). With Gregory B. Upton, Jr. Estimating the benefits of electricity restoration to critical energy infrastructure. Funded by Entergy Corporation. Total Funding: \$56,088. Status: Completed.
2. *Co-Principal Investigator.* (2021). With Gregory B. Upton Jr. Estimating the benefits of underground carbon dioxide storage investments. Funded by Gulf Coast Sequestration. Total Funding: \$124,835. Status: In Progress.
3. *Principal Investigator.* (2021). Louisiana Greenhouse Gas Inventory Update and Report. Governor's Office of Coastal Affairs. Total Funding \$65,830. Status: Completed.
4. *Principal Investigator.* (2021). Estimating Louisiana's power generation greenhouse gas emissions. The Nature Conservancy. Total Funding: \$9,994. Status: Completed.
5. *Co-Principal Investigator.* (2021). With Gregory B. Upton. Estimating the economic impacts of methanol investments in St. James Parish. Koch Industries. Total Funding: \$37,457. Status: Completed.
6. *Co-Principal Investigator.* (2019). With Gregory B. Upton Estimating the economic impact of TransCanada pipeline investments. TransCanada Pipelines. Total Funding: \$40,798. Status: Completed.
7. *Co-Principal Investigator.* (2018). With Gregory B. Upton. Estimating the economic impact of Enable Pipeline Investments. Total Funding: \$49,798. Status: Completed.
8. *Co-investigator.* Estimating offshore Gulf of Mexico carbon capture, sequestration, and utilization opportunities. (2018). With Southern States Energy Board, Advanced Resources International, Argonne Laboratories, University of Alabama, University of South Carolina, and Oklahoma State University. U.S. Department of Energy, National Energy Technology Laboratory. Total funding: \$731,031 (LSU share of \$4.0 million project, three years, in progress).
9. *Co-Principal Investigator.* Planning Grant: Engineering Research Center for Resiliency Enhancement and Disaster-Impact Interception ("READII") in the Manufacturing Sector. (2018). With Mahmoud El-Halwagi, Mark Stadtherr, Heshmat Aglan, Efstratos Postikopoulos. National Science Foundation (#1840512). Total Funding: \$100,000 (one year). Status: Completed.
10. *Principal Investigator.* Understanding MISO long term infrastructure needs and stakeholder positions. (2017). Midcontinent Independent System Operator. Total Project: \$9,500, six months. Status: Completed.

11. *Principal Investigator.* Offshore oil and gas activity impacts on ecosystem services in the Gulf of Mexico. (2017). With Brian F. Snyder. U.S. Department of the Interior, Bureau of Ocean Energy Management. Total Project: \$240,982, two years. Status: Completed.
12. *Principal Investigator.* Economic Impacts of the Bayou Bridge pipeline. (2017). With Gregory B. Upton, Jr., Energy Transfer Corporation. \$9,900. Status: Completed.
13. *Principal Investigator.* Integrated carbon capture, storage and utilization in the Louisiana chemical corridor. (2017). U.S. Department of Energy/National Energy Technology Laboratory. Total funding: \$1,300,000 (18 months). Status: Completed.
14. *Co-Principal Investigator.* Gulf coast energy outlook and analysis. (2016). With Gregory B. Upton and Mallory Vachon. Regions Bank. Total funding: \$20,000, one year. Status: Completed.
15. *Principal Investigator.* GOM energy infrastructure trends and factbook update. (2016). With Gregory B. Upton and Mallory Vachon. U.S. Department of the Interior, Bureau of Ocean Energy Management (“BOEM”). Total funding: \$224,995, two years. Status: In progress.
16. *Principal Investigator.* Examining Louisiana’s Industrial Carbon Sequestration Potential. Phase 2: Follow-up and estimation. (2016). With Brian F. Snyder. Southern States Energy Board. Total Project: \$69,990, three months. Status: Completed.
17. *Principal Investigator.* Examining Louisiana’s Industrial Carbon Sequestration Potential. Phase 1: Scoping and Identification. (2016). With Brian F. Snyder. Southern States Energy Board. Total Project: \$29,919, three months. Status: Completed.
18. *Principal Investigator.* Energy efficiency building codes for Louisiana. (2016). With Brian F. Snyder. Louisiana Department of Natural Resources. Total Project: \$50,000, one year. Status: Completed.
19. *Principal Investigator.* An update of Louisiana’s combined heat and power potentials, current utilizations, and barriers to improved operating efficiencies. (2016). Louisiana Department of Natural Resources. Total Project: \$90,000, one year. Status: Completed.
20. *Principal Investigator.* Combined Heat and Power Stakeholder Meeting. (2016). Southeastern Energy Efficiency Council. Total Project \$9,160, two months. Status: Completed.
21. *Co-Investigator.* “Expanding Ecosystem Service Provisioning from Coastal Restoration to Minimize Environmental and Energy Constraints” (2015). With John Day and Chris D’Elia. Gulf Research Program. Total Project: \$147,937. Status: Completed.
22. *Principal Investigator.* “Coastal Marine Institute Administrative Grant” (2104). U.S. Department of the Interior. Total Project \$45,000. Status: Completed.
23. *Principal Investigator.* “Analysis of the Potential for Combined Heat and Power (CHP) in Louisiana.” (2013). Louisiana Department of Natural Resources. Total Project: \$90,000. Status: Completed.
24. *Co-Investigator.* “CNH: A Tale of Two Louisianas: Coupled Natural-Human Dynamics in a Vulnerable Coastal System” (2013) With Nina Lam, Margaret Reams, Kam-Biu Liu, Victor Rivera, Yi-Jun Xu and Kelley Pace. National Science Foundation. Total Project: \$1.5 million. Status: Completed (Sept 2012-Feb 2017).
25. *Principal Investigator.* “Examination of Unconventional Natural Gas and Industrial Economic Development” (2012). America’s Natural Gas Alliance. Total Project: \$48,210. Status:

- Completed.
26. *Principal Investigator.* “Investigation of the Potential Economic Impacts Associated with Shell’s Proposed Gas-To-Liquids Project” (2012). Shell Oil Company, North America. Total Project: \$76,708. Status: Completed.
  27. *Principal Investigator.* “Analysis of the Federal Wind Energy Production Tax Credit.” American Energy Alliance. Total Project: \$20,000. Status: Completed.
  28. *Principal Investigator.* “Energy Sector Impacts Associated with the Deepwater Horizon Oil Spill.” Louisiana Department of Economic Development. Total Project: approximately \$50,000. Status: Completed.
  29. *Principal Investigator.* “Economic Contributions and Benefits Support by the Port of Venice.” Port of Venice Coalition. Total Project: \$20,000. Status: Completed.
  30. *Principal Investigator.* “Energy Policy Development in Louisiana.” Louisiana Department of Natural Resources. Total Project: \$150,000. Status: Completed.
  31. *Principal Investigator.* “Preparing Louisiana for the Possible Federal Regulation of Greenhouse Gas Regulation.” With Michael D. McDaniel. Louisiana Department of Economic Development. Total Project: \$98,543. Status: Completed.
  32. *Principal Investigator.* “OCS Studies Review: Louisiana and Texas Oil and Gas Activity and Production Forecast; Pipeline Position Paper; and Geographical Units for Observing and Modeling Socioeconomic Impact of Offshore Activity.” (2008). With Mark J. Kaiser and Allan G. Pulsipher. U.S. Department of the Interior, Minerals Management Service. Total Project: \$377,917 (3 years). Status: Completed.
  33. *Principal Investigator.* “State and Local Level Fiscal Effects of the Offshore Petroleum Industry.” (2007). With Loren C. Scott. U.S. Department of the Interior, Minerals Management Service. Total Project: \$241,216 (2.5 years). Status: Completed.
  34. *Principal Investigator.* “Understanding Current and Projected Gulf OCS Labor and Ports Needs.” (2007). With Allan G. Pulsipher, Kristi A. R. Darby. U.S. Department of the Interior, Minerals Management Service. Total Project: \$169,906. (one year). Status: Completed.
  35. *Principal Investigator.* “Structural Shifts and Concentration of Regional Economic Activity Supporting GOM Offshore Oil and Gas Activities.” (2007). With Allan G. Pulsipher, Michelle Barnett. U.S. Department of the Interior, Minerals Management Service. Total Project: \$78,374 (one year). Status: Awarded, Completed.
  36. *Principal Investigator.* “Plaquemine Parish’s Role in Supporting Critical Energy Infrastructure and Production.” (2006). With Seth Cureington. Plaquemines Parish Government, Office of the Parish President and Plaquemines Association of Business and Industry. Total Project: \$18,267. Status: Completed.
  37. *Principal Investigator.* “Diversifying Energy Industry Risk in the Gulf of Mexico.” (2006). With Kristi A. R. Darby. U.S. Department of the Interior, Minerals Management Service. Total Project: \$65,302 (two years). Status: Awarded, Completed.
  38. *Principal Investigator.* “Post-Hurricane Assessment of OCS-Related Infrastructure and Communities in the Gulf of Mexico Region.” (2006). U.S. Department of the Interior, Minerals Management Service. Total Project Funding: \$244,837. Status: Completed.
  39. *Principal Investigator.* “Ultra-Deepwater Road Mapping Process.” (2005). With Kristi A. R.

- Darby, Subcontract with the Texas A&M University, Department of Petroleum Engineering. Funded by the Gas Technology Institute. Total Project Funding: \$15,000. Status: Completed.
40. *Principal Investigator*. “An Examination of the Opportunities for Drilling Incentives on State Leases.” (2004). With Robert H. Baumann and Kristi A. R. Darby. Louisiana Office of Mineral Resources. Total Project Funding: \$75,000. Status: Completed.
  41. *Principal Investigator*. “An Examination on the Development of Liquefied Natural Gas Facilities on the Gulf of Mexico.” (2004). With Dmitry V. Mesyanzhinov and Mark J. Kaiser. U.S. Department of the Interior, Minerals Management Service. Total Project Funding \$101,054. Status: Completed.
  42. *Principal Investigator*. “Examination of the Economic Impacts Associated with Large Customer, Industrial Retail Choice.” (2004). With Dmitry V. Mesyanzhinov. Louisiana Mid-Continent Oil and Gas Association. Total Project Funding: \$37,000. Status: Completed.
  43. *Principal Investigator*. “Economic Opportunities from LNG Development in Louisiana.” (2003). With Dmitry V. Mesyanzhinov. Metrovision/New Orleans Chamber of Commerce and the Louisiana Department of Economic Development. Total Project Funding: \$25,000. Status: Completed.
  44. *Principal Investigator*. “Marginal Oil and Gas Properties on State Leases in Louisiana: An Empirical Examination and Policy Mechanisms for Stimulating Additional Production.” (2002). With Robert H. Baumann and Dmitry V. Mesyanzhinov. Louisiana Office of Mineral Resources. Total Project Funding: \$72,000. Status: Completed.
  45. *Principal Investigator*. “A Collaborative Investigation of Baseline and Scenario Information for Environmental Impact Statements.” (2002). With Dmitry V. Mesyanzhinov and Williams O. Olatubi. U.S. Department of Interior, Minerals Management Service. Total Project Funding: \$557,744. Status: Awarded, In Progress.
  46. *Co-Principal Investigator*. “An Analysis of the Economic Impacts of Drilling and Production Activities on State Leases.” (2002). With Robert H. Baumann, Allan G. Pulsipher, and Dmitry V. Mesyanzhinov. Louisiana Office of Mineral Resources. Total Project Funding: \$8,000. Status: Completed.
  47. *Principal Investigator*. “Cost Profiles and Cost Functions for Gulf of Mexico Oil and Gas Development Phases for Input Output Modeling.” (1998). With Dmitry Mesyanzhinov and Allan G. Pulsipher. U.S. Department of Interior, Minerals Management Service. Total Project Funding: \$244,956. Status: Completed.
  48. *Principal Investigator*. “An Economic Impact Analysis of OCS Activities on Coastal Louisiana.” (1998). With Dmitry Mesyanzhinov and David Hughes. U.S. Department of Interior, Minerals Management Service. Total Project Funding: \$190,166. Status: Completed.
  49. *Principal Investigator*. “Energy Conservation and Electric Restructuring in Louisiana.” (1997). Louisiana Department of Natural Resources.” Petroleum Violation Escrow Program Funds. Total Project Funding: \$43,169. Status: Completed.
  50. *Principal Investigator*. “The Industrial Supply of Electricity: Commercial Generation, Self-Generation, and Industry Restructuring.” (1996). With Andrew Kleit. Louisiana Energy Enhancement Program, LSU Office of Research and Development. Total Project Funding: \$19,948. Status: Completed.
  51. *Co-Principal Investigator*. “Assessing the Environmental and Safety Risks of the Expanded



Role of Independents in Oil and Gas E&P Operations on the U.S. Gulf of Mexico OCS.” (1996). With Allan Pulsipher, Omowumi Iledare, Dmitry Mesyanzhinov, William Daniel, and Bob Baumann. U.S. Department of Interior, Minerals Management Service, Grant Number 95-0056. Total Project Funding: \$109,361. Status: Completed.

### **ACADEMIC CONFERENCE PAPERS/PRESENTATIONS**

1. “The changing nature of Gulf of Mexico energy infrastructure.” (2017). Session 3B: New Directions in Social Science Research. 27<sup>th</sup> Gulf of Mexico Region Information Technology Meetings. U.S. Department of the Interior, Bureau of Ocean Energy Management, Environmental Studies Program. New Orleans, LA. August 24.
2. “Capacity utilization, efficiency trends, and economic risks for modern CHP installations.” (2017). U.S. Department of Energy, 2017 Industrial Energy Technology Conference, New Orleans, LA June 21.
3. “Vulnerability assessment of the central Gulf of Mexico coast using a multi-dimensional approach.” (2016). With Siddhartha Narra. Eighth International Conference on Environmental Science and Technology. June 6-10, Houston, TX.
4. “The Impact of Infrastructure Cost Recovery Mechanisms on Pipeline Replacements and Leaks.” (2015). With Gregory Upton. Southern Economic Association Meeting 2015. New Orleans, Louisiana. November 23.
5. “The Impact of Infrastructure Cost Recovery Mechanisms on Pipeline Replacements and Leaks” (2015). With Gregory Upton. 38<sup>th</sup> IAEE International Conference, Antalya, Turkey. May 26.
6. “Modifying Renewables Policies to Sustain Positive Economic and Environmental Change” (2015). IEEE Annual Green Technologies (“Greentech”) Conference. April 17.
7. “The Gulf Coast Industrial Investment Renaissance and New CHP Development Opportunities.” (2014). Industrial Energy and Technology Conference, New Orleans, Louisiana. May 20.
8. “Estimating Critical Energy Infrastructure Value at Risk from Coastal Erosion” (2014). With Siddhartha Narra. American’s Estuaries: 7<sup>th</sup> Annual Summit on Coastal and Estuarine Habitat Restoration. Washington, D.C., November 3-6.
9. “Economies of Scale, Learning Curves, and Offshore Wind Development Costs” (2012). With Gregory Upton. Southern Economic Association Annual Conference, New Orleans, LA November 17.
10. “Analysis of Risk and Post-Hurricane Reaction.” (2009). 25<sup>th</sup> Annual Information Transfer Meeting. U.S. Department of the Interior, Minerals Management Service. January 7.
11. “Legacy Litigation, Regulation, and Other Determinants of Interstate Drilling Activity Differentials.” (2008). With Christopher Peters and Mark Kaiser. 28<sup>th</sup> Annual USAEE/IAEE North American Conference: Unveiling the Future of Future of Energy Frontiers. New Orleans, LA, December 3.
12. “Gulf Coast Energy Infrastructure Renaissance: Overview.” (2008). 28<sup>th</sup> Annual USAEE/IAEE North American Conference: Unveiling the Future of Future of Energy Frontiers. New Orleans, LA, December 3.

13. "Understanding the Impacts of Katrina and Rita on Energy Industry Infrastructure." (2008). American Chemical Society National Meetings, New Orleans, Louisiana. April 7.
14. "Determining the Economic Value of Coastal Preservation and Restoration on Critical Energy Infrastructure." (2007). With Kristi A. R. Darby and Michelle Barnett. International Association for Energy Economics, Wellington, New Zealand, February 19.
15. "Regulatory Issues in Rate Design, Incentives, and Energy Efficiency." (2007). 34<sup>th</sup> Annual Public Utilities Research Center Conference, University of Florida. Gainesville, FL. February 16.
16. "An Examination of LNG Development on the Gulf of Mexico." (2007). With Kristi A.R. Darby. US Department of the Interior, Minerals Management Service. 24<sup>th</sup> Annual Information Technology Meeting. New Orleans, LA. January 9.
17. "OCS-Related Infrastructure on the GOM: Update and Summary of Impacts." (2007). U.S. Department of the Interior, Minerals Management Service. 24<sup>th</sup> Annual Information Technology Meeting. New Orleans, LA. January 10.
18. "The Economic Value of Coastal Preservation and Restoration on Critical Energy Infrastructure." (2006). With Michelle Barnett. Third National Conference on Coastal and Estuarine Habitat Restoration. Restore America's Estuaries. New Orleans, Louisiana, December 11.
19. "The Impact of Implementing a 20 Percent Renewable Portfolio Standard in New Jersey." (2006). With Seth E. Cureington. Mid-Continent Regional Science Association 37<sup>th</sup> Annual Conference, Purdue University, Lafayette, Indiana, June 9.
20. "The Impacts of Hurricane Katrina and Rita on Energy infrastructure Along the Gulf Coast." (2006). Environment Canada: 2006 Arctic and Marine Oilspill Program. Vancouver, British Columbia, Canada.
21. "Hurricanes, Energy Markets, and Energy Infrastructure in the Gulf of Mexico: Experiences and Lessons Learned." (2006). With Kristi A.R. Darby and Seth E. Cureington. 29<sup>th</sup> Annual IAEE International Conference, Potsdam, Germany, June 9.
22. "An Examination of the Opportunities for Drilling Incentives on State Leases in Louisiana." (2005). With Kristi A.R. Darby. 28<sup>th</sup> Annual IAEE International Conference, Taipei, Taiwan (June).
23. "Fiscal Mechanisms for Stimulating Oil and Gas Production on Marginal Leases." (2004). With Jeffrey M. Burke. International Association of Energy Economics Annual Conference, Washington, D.C. (July).
24. "GIS and Applied Economic Analysis: The Case of Alaska Residential Natural Gas Demand." (2003). With Dmitry V. Mesyanzhinov. Presented at the Joint Meeting of the East Lakes and West Lakes Divisions of the Association of American Geographers in Kalamazoo, MI, October 16-18.
25. "Are There Any In-State Uses for Alaska Natural Gas?" (2002). With Dmitry V. Mesyanzhinov and William E. Nebesky. IAEE/USAEE 22<sup>nd</sup> Annual North American Conference: "Energy Markets in Turmoil: Making Sense of It All." Vancouver, British Columbia, Canada. October 7.

26. "The Economic Impact of State Oil and Gas Leases on Louisiana." (2002). With Dmitry V. Mesyanzhinov. 2002 National IMPLAN Users' Conference. New Orleans, Louisiana, September 4-6.
27. "Moving to the Front of the Lines: The Economic Impact of Independent Power Plant Development in Louisiana." (2002). With Dmitry V. Mesyanzhinov and Williams O. Olatubi. 2002 National IMPLAN Users' Conference. New Orleans, Louisiana, September 4-6.
28. "New Consistent Approach to Modeling Regional Economic Impacts of Offshore Oil and Gas Activities in the Gulf of Mexico." (2002). With Vicki Zatarain. 2002 National IMPLAN Users' Conference. New Orleans, Louisiana, September 4-6.
29. "Distributed Energy Resources, Energy Efficiency, and Electric Power Industry Restructuring." (1999). American Society of Environmental Science Fourth Annual Conference. Baton Rouge, Louisiana. December.
30. "Estimating Efficiency Opportunities for Coal Fired Electric Power Generation: A DEA Approach." (1999). With Williams O. Olatubi. Southern Economic Association Sixty-ninth Annual Conference. New Orleans, November.
31. "Applied Approaches to Modeling Regional Power Markets." (1999.) With Robert F. Cope. Southern Economic Association Sixty-ninth Annual Conference. New Orleans, November 1999.
32. "Parametric and Non-Parametric Approaches to Measuring Efficiency Potentials in Electric Power Generation." (1999). With Williams O. Olatubi. International Atlantic Economic Society Annual Conference, Montreal, October.
33. "Asymmetric Choice and Customer Benefits: Lessons from the Natural Gas Industry." (1999). With Rachelle F. Cope and Dmitry Mesyanzhinov. International Association of Energy Economics Annual Conference. Orlando, Florida. August.
34. "Modeling Regional Power Markets and Market Power." (1999). With Robert F. Cope. Western Economic Association Annual Conference. San Diego, California. July.
35. "Economic Impact of Offshore Oil and Gas Activities on Coastal Louisiana" (1999). With Dmitry Mesyanzhinov. Annual Meeting of the Association of American Geographers. Honolulu, Hawaii. March.
36. "Empirical Issues in Electric Power Transmission and Distribution Cost Modeling." (1998). With Robert F. Cope and Dmitry Mesyanzhinov. Southern Economic Association. Sixty-Eighth Annual Conference. Baltimore, Maryland. November.
37. "Modeling Electric Power Markets in a Restructured Environment." (1998). With Robert F. Cope and Dan Rinks. International Association for Energy Economics Annual Conference. Albuquerque, New Mexico. October.
38. "Benchmarking Electric Utility Distribution Performance." (1998) With Robert F. Cope and Dmitry Mesyanzhinov. Western Economic Association, Seventy-sixth Annual Conference. Lake Tahoe, Nevada. June.
39. "Power System Operations, Control, and Environmental Protection in a Restructured Electric Power Industry." (1998). With Fred I. Denny. IEEE Large Engineering Systems Conference on Power Engineering. Nova Scotia, Canada. June.

40. "Benchmarking Electric Utility Transmission Performance." (1997). With Robert F. Cope and Dmitry Mesyanzhinov. Southern Economic Association, Sixty-seventh Annual Conference. Atlanta, Georgia. November 21-24.
41. "A Non-Linear Programming Model to Estimate Stranded Generation Investments in a Deregulated Electric Utility Industry." (1997). With Robert F. Cope and Dan Rinks. Institute for Operations Research and Management Science Annual Conference. Dallas Texas. October 26-29.
42. "New Paradigms for Power Engineering Education." (1997). With Fred I. Denny. International Association of Science and Technology for Development, High Technology in the Power Industry Conference. Orlando, Florida. October 27-30
43. "Cogeneration and Electric Power Industry Restructuring." (1997). With Andrew N. Kleit. Western Economic Association, Seventy-fifth Annual Conference. Seattle, Washington. July 9-13.
44. "The Unintended Consequences of the Public Utilities Regulatory Policies Act of 1978." (1997). National Policy History Conference on the Unintended Consequences of Policy Decisions. Bowling Green State University. Bowling Green, Ohio. June 5-7.
45. "Assessing Environmental and Safety Risks of the Expanding Role of Independents in E&P Operations on the Gulf of Mexico OCS." (1996). With Allan Pulsipher, Omowumi Iledare, Dmitry Mesyanzhinov, and Bob Baumann. U.S. Department of Interior, Minerals Management Service, 16th Annual Information Transfer Meeting. New Orleans, Louisiana.
46. "Empirical Modeling of the Risk of a Petroleum Spill During E&P Operations: A Case Study of the Gulf of Mexico OCS." (1996). With Omowumi Iledare, Allan Pulsipher, and Dmitry Mesyanzhinov. Southern Economic Association, Sixty-Sixth Annual Conference. Washington, D.C.
47. "Input Price Fluctuations, Total Factor Productivity, and Price Cap Regulation in the Telecommunications Industry" (1996). With Farhad Niami. Southern Economic Association, Sixty-Sixth Annual Conference. Washington, D.C.
48. "Recovery of Stranded Investments: Comparing the Electric Utility Industry to Other Recently Deregulated Industries" (1996). With Farhad Niami and Dmitry Mesyanzhinov. Southern Economic Association, Sixty-Sixth Annual Conference. Washington, D.C.
49. "Spatial Perspectives on the Forthcoming Deregulation of the U.S. Electric Utility Industry." (1996) With Dmitry Mesyanzhinov. Southwest Association of American Geographers Annual Meeting. Norman, Oklahoma.
50. "Comparing the Safety and Environmental Performance of Offshore Oil and Gas Operators." (1995). With Allan Pulsipher, Omowumi Iledare, Dmitry Mesyanzhinov, William Daniel, and Bob Baumann. U.S. Department of Interior, Minerals Management Service, 15th Annual Information Transfer Meeting. New Orleans, Louisiana.
51. "Empirical Determinants of Nuclear Power Plant Disallowances." (1995). Southern Economic Association, Sixty-Fifth Annual Conference. New Orleans, Louisiana.
52. "A Cross-Sectional Model of IntraLATA MTS Demand." (1995). Southern Economic Association, Sixty-Fifth Annual Conference. New Orleans, Louisiana.

### **ACADEMIC SEMINARS AND PRESENTATIONS**

1. Panelist. “Fuel Security, Resource Adequacy & Value of Transmission.” (2019). 6<sup>th</sup> Annual Electricity Dialogue at Northwestern University: Energy and Capacity: Transitions? Northwestern University Center of Law, Regulation, and Economic Growth.
2. “Air Emissions Regulation and Policy: The Recently Proposed Cross State Air Pollution Rule and the Implications for Louisiana Power Generation.” Lecture before School of the Coast & Environment. November 5, 2011.
3. “Energy Regulation: Overview of Power and Gas Regulation.” Lecture before School of the Coast & Environment, Course in Energy Policy and Law. October 5, 2009.
4. “Trends and Issues in Renewable Energy.” Presentation before the School of the Coast & Environment, Louisiana State University. Spring Guest Lecture Series. May 4, 2007.
5. “CES Research Projects and Status.” Presentation before the U.S. Department of the Interior, Minerals Management Service, Outer Continental Shelf Scientific Committee Meeting, New Orleans, LA May 22, 2007.
6. “Hurricane Impacts on Energy Production and Infrastructure.” Presentation Before the 53<sup>rd</sup> Mineral Law Institute, Louisiana State University. April 7, 2006.
7. “Trends and Issues in the Natural Gas Industry and the Development of LNG: Implications for Louisiana. (2004) 51<sup>st</sup> Mineral Law Institute, Louisiana State University, Baton Rouge, LA. April 2, 2004.
8. “Electric Restructuring and Conservation.” (2001). Presentation before the Department of Electrical Engineering, McNeese State University. Lake Charles, Louisiana. May 2, 2001.
9. “Electric Restructuring and the Environment.” (1998). Environment 98: Science, Law, and Public Policy. Tulane University. Tulane Environmental Law Clinic. March 7, New Orleans, Louisiana.
10. “Electric Restructuring and Nuclear Power.” (1997). Louisiana State University. Department of Nuclear Science. November 7, Baton Rouge, Louisiana.
11. “The Empirical Determinants of Co-generated Electricity: Implications for Electric Power Industry Restructuring.” (1997). With Andrew N. Kleit. Florida State University. Department of Economics: Applied Microeconomics Workshop Series. October 17, Tallahassee, Florida.

### **PROFESSIONAL AND CIVIC PRESENTATIONS**

1. “The role and outlook for CCS in Louisiana energy manufacturing development.” (2024). GINP-CCS International Network. February 20, 2024.
2. “Louisiana energy manufacturing development outlook and the energy transition.” (2024). Greater Baton Rouge Industry Alliance. February 1, 2024.
3. “Gulf Coast Energy Outlook 2024.” (2023). LSU Center for Energy Studies, Baton Rouge, LA, Fall 2023.
4. “Louisiana clean, green industry: reconciling industrial decarbonization, capital formation, and growth.” (2023). Louisiana State Bar Association, Public Utility Section. December 1, 2023.

5. “Expert witness training: considerations for preparation and effective execution during public utility regulatory hearings and proceedings.” (2023). On the Behalf of the National Association of State Utility Consumer Advocates, Accounting and Finance Subcommittee. September 21, 2023.
6. “Gulf cost energy outlook: traditional resources and the energy transition.” (2023). AAPL/Gulf Coast Land Institute Meetings. April 26, 2023.
7. “Ratepayer considerations in the promotion of clean energy.” (2023). Public Utility Law Section Roundtable Discussion. April 21, 2023.
8. “Gulf coast energy outlook: traditional resources and the energy transition.” (2023). Louisiana Engineering Society. April 19, 2023.
9. “Carbon capture & storage: three thoughts and considerations.” (2023). Gulf Coast Power Association. 9<sup>th</sup> Annual MISO/SPP Conference. March 9, 2023.
10. “Natural gas markets: prices; trends; and ratepayer impacts.” (2023). Maryland Energy Advocates Virtual Monthly Meeting. February 17, 2023.
11. “Hydrogen overview and its role in Louisiana decarbonization.” (2022). Louisiana Public Service Commission Monthly Business & Executive Meeting. November 17, 2022.
12. “High winter natural gas prices and ratepayer impacts.” (2022). National Association of State Utility Consumer Advocates (“NASUCA”) Annual Conference. November 14, 2022.
13. “Facing the future together: the Louisiana energy transition, industrial decarbonization, and capital formation trends.” (2022). Louisiana Chemical Association: Annual Meeting 2022. October 27, 2022.
14. “Louisiana and the energy transition: reconciling industrial decarbonization, capital formation, and growth.” (2022). Louisiana Air and Waste Management 2022 Annual Meeting. October 26, 2022.
15. “The Louisiana energy transition, industrial decarbonization, and industrial capital formation trends.” (2022). Postlethwaite & Netterville: 2022 Governmental Update. August 4, 2022.
16. “Identifying and mapping regulatory requirements for CCUS projects.” (2022). SECARB Offshore GOM Gulf Regulator Workshop. New Orleans LA. May 16, 2022.
17. “Louisiana industrial decarbonization opportunities.” (2022). Louisiana Chemical Association/Louisiana Chemical Industry Alliance Legislative Meeting. May 11, 2022. Baton Rouge, LA.
18. “Natural Gas outlook, 2022: supply, demand, and geopolitical considerations.” (2022). National Association of State Utility Consumer Advocates (“NASUCA”) Monthly Natural Gas Committee Webinar. March 30, 2022.
19. “Louisiana industrial decarbonization opportunities.” (2022). LSU Law School, Journal of Energy Law and Resources Symposium on Energy Transitions. February 4, 2022. Baton Rouge, LA.
20. Panelist. Grid Resiliency in the Era of Extreme Weather. Gulf Coast Power Association 8<sup>th</sup> Annual MISO/SPP Regional Meeting. February 9, 2022. New Orleans, LA.
21. Panelist. Natural Gas Industry Update. (2022). National Association of State Utility Consumer Advocates Annual Meeting. (virtual). November 8, 2021.

22. “Overview of Louisiana’s greenhouse gas emissions and trends.” (2021). Louisiana Energy Users Group (“LEUG”) Meeting. November 11, 2021.
23. “State of energy in Louisiana: a preview of the 2021 Gulf Coast Energy Outlook.” (2021). Financial Planning Association of Baton Rouge. November 10, 2021.
24. “Replacing natural gas and industrial decarbonization: utility and ratemaking issues.” (2021). Virtual Joint Annual Meeting: Virginia Committee for Fair Utility Rates, Old Dominion Committee for Fair Utility Rates, and Virginia Industrial Gas Users Group Workshop. September 8, 2021.
25. “Louisiana 2021 GHG Inventory: Update and summary of preliminary findings.” (2021). Presentation before the Climate Initiative Task Force. July 29, 2021.
26. “Opportunities for the development of a hydrogen economy in Louisiana.” (2021). Louisiana Energy Climate Solutions Workshop. June 15, 2021.
27. “Natural gas: Building gas system resilience. Overview of the 2021 polar vortex and its implications for gas resiliency.” (2021). National Association of State Utility Consumer Advocates (“NASUCA”). Virtual mid-year meeting. June 14, 2021.
28. “Status and briefing on the Louisiana greenhouse gas inventory and emissions analysis.” (2021). Scientific Advisory Group (“SAG”) Meeting, Governor’s Climate Initiative Task Force. March 29, 2021.
29. “Louisiana carbon capture: sinks; sources; and the role of transportation in industrial applications.” (2021). LSU Journal of Energy Law & Resources Symposium on Carbon Capture and Solutions. February 5, 2021.
30. “Natural gas outlook, 2021: production, demand, pandemic and policy.” (2021). National Association of State Utility Consumer Advocates (“NASUCA”) Monthly Natural Gas Committee Webinar. January 20, 2021.
31. “Consumer Perspectives on the Rate Design of the Future.” (2020). National Association of State Utility Consumer Advocates (“NASUCA”). Annual Conference, November 10.
32. “Evaluation of Louisiana’s Depleted Gas Reservoirs for Geological Carbon Sequestration.” (2020). Louisiana Mid-Continent Oil and Gas Association (“LMOGA”) Carbon Capture and Underground Storage (“CCUS”) Committee Meeting. August 25.
33. “The 2020 Gulf Coast Energy Outlook: COVID-19 update.” (2020). Baton Rouge Area Chamber of Commerce Business Webinar. COVID-19 and Global Supply Impacts on the Capital Region and Louisiana Economies. Baton Rouge, LA. June 3.
34. “Ratepayer benefits of reforming PURPA”. (2020). Harvard Electricity Policy Group Webinar. PURPA: A time to reform or reduce its role? March 26.
35. “Pipeline industry: economic trends and outlook”. (2020). Joint Industry Association Annual Meeting. Louisiana Mid-Continent Oil and Gas Association (“LMOGA”) and the Louisiana Oil and Gas Association (“LOGA”). Lake Charles, LA March 5.
36. “The outlook for natural gas: storm clouds ahead?” (2020). National Association of State Utility Consumer Advocates (“NASUCA”). Natural Gas Committee Webinar, February 26.
37. “The 2020 Gulf Coast Energy Outlook”. (2020). University of Louisiana Lafayette, Southern Unconventional Resources Center for Excellence. Lafayette, LA February 16.

38. “Opportunities for carbon capture, utilization, and storage in the Louisiana chemical corridor”. (2020). Air and Waste Management Association, Louisiana Section Luncheon. Gonzales, LA January 16.
39. Panelist. (2020). Baton Route Advocate, 2020 Economic Outlook Summit. Baton Rouge Advocate. January 8.
40. “2020 Louisiana business climate outlook: the view from the energy sector.” (2019). American Council of Engineering Companies Fall Conference. November 21, 2019. Baton Rouge, LA
41. “The urgency of PURPA reform in protecting ratepayers.” (2019). Americans for Tax Reform, Fall 2019 Coalition Leaders Summit, November 14, 2019. New Orleans, LA.
42. “Louisiana’s coast and the energy industry.” (2019). 2019 API Delta Chapter Joint Society Luncheon Meeting. November 12, 2019, New Orleans, LA.
43. “Reforming PURPA: implications for ratepayers.” (2019). Thomas Jefferson Institute for Public Policy, Annual Energy Summit, State Policy Network Annual Meeting. Colorado Springs, CO, October 28.
44. “Natural gas outlook: supply, demand and prices.” (2019). National Association of State Utility Consumer Advocates, Natural Gas Committee Monthly Meeting. July 30, 2019.
45. “The economic impacts and outlook for LNG development on the Gulf Coast.” (2019). 73<sup>rd</sup> Annual Meeting of the Southern Legislative Conference of the Council of State Governments. New Orleans, LA, July 14. (prepared presentation, hurricane cancellation)
46. “Natural gas outlook: supply, demand, and prices.” (2019). NASUCA Mid-Year Meeting. Portland, OR, June 20.
47. “Overview of Louisiana LNG issues and trends.” (2019). Berlin: LNG, Energy Security, and Diversity Reporting Tour, LSU Center for Energy Studies. Baton Rouge, LA, May 9.
48. “Overview of Louisiana energy issues and outlook.” (2019). Australian Media Visit, Greater New Orleans, Inc./Baton Rouge Area Foundation. Baton Rouge, LA, April 29.
49. “Gulf Coast Energy Outlook 2019: Regional trends and outlook.” (2019). Women’s Energy Network. Baton Rouge, LA, April 23.
50. “MISO Grid Vision 2033.” (2019). 2019 Spring Regulator and Policymaker Forum. New Orleans, LA, April 15-16.
51. “Ratepayer benefits of reforming PURPA.” (2019). LSU Center for Energy Studies Industry Advisory Council Meeting. March 27.
52. “Incentives, risk, and the changing nature of regulation.” (2019). NASUCA Water Committee monthly meeting/webinar. March 13.
53. “Gulf Coast Energy Outlook 2019: Production, trade and infrastructure trends.” (2019). 66<sup>th</sup> Annual Mineral Board Institute Meetings. Baton Rouge, LA, March 14.
54. “A golden age: energy outlook 2019.” (2019). Engineering News Record Webinar. February 13.
55. Panelist. (2019). Baton Route Advocate, 2019 Economic Outlook Summit. Baton Rouge Advocate. January 8.



56. “MISO Grid Vision 2033.” (2018). 2018 Winter Regulatory and Policymaker Forum. New Orleans, LA, December 11.
57. “Gulf Coast Energy Outlook 2019.” (2018). LSU Center for Energy Studies, Baton Rouge, LA, Fall 2018.
58. “How LNG is transforming Louisiana’s energy economy.” (2018). Louisiana State Bar Association, Public Utility Section. Baton Rouge, LA, November 30.
59. “Overview of Louisiana LNG issues and trends.” (2018). Kean Miller Law Firm: Energy and Environmental Practice Group. Baton Rouge, LA, November 28.
60. “Infrastructure and capacity: challenges for development.” (2018). Society of Utility and Regulatory Financial Analysts (SURFA) Annual Meeting, New Orleans, LA, April 20.
61. “Louisiana industrial cogeneration trends.” (2018). Annual Louisiana Solid Waste Association Conference, Lafayette, LA, March 16.
62. “Gulf Coast industrial development: overview of trends and issues.” (2018). Gulf Coast Power Association Meetings, New Orleans, LA, February 8.
63. “Energy outlook – reflection on market trends and Louisiana implications.” (2017). IberiaBank Corporation Bank Board of Directors Meeting, New Orleans, LA. November 15.
64. “Integrated carbon capture and storage in the Louisiana chemical corridor.” (2017). Industry Associates Advisory Council Meeting, Baton Rouge, LA. November 7.
65. “The outlook for natural gas and energy development on the Gulf Coast.” (2017). Louisiana Chemical Association, Annual Meeting, New Orleans, LA. October 26.
66. “Critical energy infrastructure: the big picture on resiliency research.” (2017). National Academies of Science, Engineering, and Medicine. New Orleans, LA. September 18.
67. “The changing nature of Gulf of Mexico energy infrastructure.” (2017). 27<sup>th</sup> Gulf of Mexico Region Information Technology Meetings, New Orleans, LA, August 24.
68. “Capacity utilization, efficiency trends, and economic risks for modern CHP installations.” (2017). Industrial Energy Technology Conference, New Orleans, LA. June 21.
69. “Crude oil and natural gas outlook: Where are we and where are we going?” (2017). CCREDC Economic Trends Panel. Corpus Christi, TX, June 15.
70. “Navigating through the energy landscape.” (2017). Baton Rouge Rotary Luncheon. Baton Rouge, LA, May 24.
71. “The 2017-2018 Louisiana energy outlook.” (2017). Junior Achievement of Greater New Orleans, JA BizTown Speaker Series. New Orleans, LA, May 12.
72. “The Gulf Coast energy economy: trends and outlook.” (2017). Society for Municipal Analysts. New Orleans, LA, April 21.
73. “Gulf coast energy outlook.” (2017). E.J. Ourso College of Business, Dean’s Advisory Council, Energy Committee Meeting. Baton Rouge, LA, March 31.
74. “Recent trends in energy: overview and impact for the banking community.” (2017). Oil and Gas Industry Update, Louisiana Bankers Association. Baton Rouge, LA, March 24.

75. “How supply, demand and prices have influenced unconventional development.” (2016). Energy Annual Meeting, CLEER-University Advisory Board Lecture. New Orleans, LA, September 17.
76. “The Basics of Natural Gas Production, Transportation, and Markets.” (2016). Center for Energy Studies. Baton Rouge, LA, August 1.
77. “Gulf Coast industrial development: trends and outlook.” (2016). Investor Relations Group Meeting, Edison Electric Institute. New Orleans, LA, June 23.
78. “The future of policy and regulation: Unlocking the Treasures of Utility Regulation.” (2016). Annual Meeting, National Conference of Regulatory Attorneys. Tampa, FL, June 20.
79. “Utility mergers: where’s the beef?”. (2016). National Association of State Utility Consumer Advocates Mid-Year Meetings. New Orleans, LA, June 6.
80. “Overview of the Clean Power Plan and its application to Louisiana.” (2016). Shell Oil Company Internal Meeting. April 12.
81. “Energy and economic development on the Gulf Coast: trends and emerging challenges.” (2016). Gas Processors Association Meeting. New Orleans, LA, April 11.
82. “Unconventional Oil and Gas Drilling Trends and Issues.” (2016). French Delegation Visit, LSU Center for Energy Studies. March 16.
83. “Gulf Coast Industrial Growth: Passing clouds or storms on the horizon?” (2016). Gulf Coast Power Association Meetings. New Orleans, LA, February 18.
84. “The Transition to Crisis: What do the recent changes in energy markets mean for Louisiana?” (2016). Louisiana Independent Study Group. February 2.
85. “Regulatory and Ratepayer Issues in the Analysis of Utility Natural Gas Reserves Purchases” (2016). National Association of State Utility Consumer Advocates Gas Consumer Monthly Meeting. January 25.
86. “Emerging Issues in Fuel Procurement: Opportunities & Challenges in Natural Gas Reserves Investment.” (2015). National Association of State Utility Consumer Advocates Annual Meeting. Austin, Texas. November 9.
87. “Trends and Issues in Net Metering and Solar Generation.” (2015). Louisiana Rural Electric Cooperative Meeting. November 5.
88. “Electric Power: Industry Overview, Organization, and Federal/State Distinctions.” (2015). EUCI. October 16.
89. “Natural Gas 101: The Basics of Natural Gas Production, Transportation, and Markets.” (2015). Council of State Governments Special Meeting on Gas Markets. New Orleans, LA. October 14.
90. “Update and General Business Matters.” (2015). CES Industry Associates Meeting. Baton Rouge, Louisiana. Fall 2015.
91. “The Impact of Infrastructure Cost Recovery Mechanisms on Pipeline Replacements and Leaks.” (2015). 38<sup>th</sup> IAEE 2015 International Conference. Antalya, Turkey. May 26.
92. “Industry on the Move – What’s Next?” (2015). Event Sponsored by Regional Bank and 1012 Industry Report. May 5.

93. “The State of the Energy Industry and Other Emerging Issues.” (2015). Lex Mundi Energy & Natural Resources Practice Group Global Meeting. May 5.
94. “Energy, Louisiana, and LSU.” (2015). LSU Science Café. Baton Rouge, Louisiana. April 28.
95. “Energy Market Changes and Impacts for Louisiana.” (2015). Kinetica Partners Shippers Meeting, New Orleans, Louisiana. April 22.
96. “Incentives, Risk and the Changing Nature of Utility Regulation.” (2015). NARUC Staff Subcommittee on Accounting and Finance Meetings, New Orleans, Louisiana. April 22.
97. “Modifying Renewables Policies to Sustain Positive and Economic Change.” (2015). IEEE Annual Green Technologies (“Greentech Conference”). April 17.
98. “Louisiana’s Changing Energy Environment.” (2015). John P. Laborde Energy Law Center Advisory Board Spring Meeting, Baton Rouge, Louisiana. March 27.
99. “The Latest and the Long on Energy: Outlooks and Implications for Louisiana.” (2015). Iberia Bank Advisory Board Meeting, Baton Rouge, Louisiana. February 23.
100. “A Survey of Recent Energy Market Changes and their Potential Implications for Louisiana.” (2015). Vistage Group, New Orleans, Louisiana. February 4.
101. “Energy Prices and the Outlook for the Tuscaloosa Marine Shale.” (2015). Baton Rouge Rotary Club, Baton Rouge, Louisiana. January 28.
102. “Trends in Energy & Energy-Related Economic Development.” (2014). Miller and Thompson Presentation, Baton Rouge, Louisiana. December 30.
103. “Overview EPA’s Proposed Rule Under Section 111(d) of the Clean Air Act: Impacts for Louisiana.” (2014). Louisiana State Bar: Utility Section CLE Annual Meeting, Baton Rouge, Louisiana. November 7.
104. “Overview EPA’s Proposed Clean Power Plan and Impacts for Louisiana.” (2014). Clean Cities Coalition Meeting, Baton Rouge, Louisiana. November 5.
105. “Impacts on Louisiana from EPA’s Proposed Clean Power Plan.” (2014). Air & Waste Management Annual Environmental Conference (Louisiana Chapter), Baton Rouge, Louisiana. October 29, 2014.
106. “A Look at America’s Growing Demand for Natural Gas.” (2014). Louisiana Chemical Association Annual Meeting, New Orleans, Louisiana. October 23.
107. “Trends in Energy & Energy-Related Economic Development.” (2014). 2014 Government Finance Officer Association Meetings, Baton Rouge, Louisiana. October 9.
108. “The Conventional Wisdom Associated with Unconventional Resource Development.” (2014). National Association for Business Economics Annual Conference, Chicago, Illinois. September 28.
109. “Unconventional Oil & Natural Gas: Overview of Resources, Economics & Policy Issues.” (2014). Society of Environmental Journalists Annual Meeting. New Orleans, Louisiana. September 4.
110. “Natural Gas Leveraged Economic Development in the South.” (2014). Southern Governors Association Meeting, Little Rock, Arkansas. August 16.

111. “The Past, Present and Future of CHP Development in Louisiana.” (2014). Louisiana Public Service Commission CHP Workshop, Baton Rouge, Louisiana. June 25.
112. “Regional Natural Gas Demand Growth: Industrial and Power Generation Trends.” (2014). Kinetica Partners Shippers Meeting, New Orleans, Louisiana. April 30.
113. “The Technical and Economic Potential for CHP in Louisiana and the Impact of the Industrial Investment Renaissance on New CHP Capacity Development.” (2014). Electric Power 2014, New Orleans, Louisiana. April 1.
114. “Industry Investments and the Economic Development of Unconventional Development.” (2014). Tuscaloosa Marine Shale Conference & Expo, Natchez, Mississippi. March 31.
115. Discussion Panelist. Energy Outlook 2035: The Global Energy Industry and Its Impact on Louisiana, (2014). Grow Louisiana Coalition, Baton Rouge, Louisiana. March 18.
116. “Natural Gas and the Polar Vortex: Has Recent Weather Led to a Structural Change in Natural Gas Markets?” (2014). National Association of State Utility Consumer Advocates Monthly Gas Committee Meeting. February 19.
117. “Some Unconventional Thoughts on Regional Unconventional Gas and Power Generation Requirements.” (2014). Gulf Coast Power Association Special Briefing, New Orleans, Louisiana. February 6.
118. “Leveraging Energy for Industrial Development.” (2013). 2013 Governor’s Energy Summit, Jackson, Mississippi. December 5.
119. “Natural Gas Line Extension Policies: Ratepayer Issues and Considerations.” (2013). National Association of State Utility Consumer Advocates Annual Meeting, Orlando, Florida. November 19.
120. “Replacement, Reliability & Resiliency: Infrastructure & Ratemaking Issues in the Power & Natural Gas Distribution Industries.” (2013). Louisiana State Bar, Public Utility Section Meetings. November 15.
121. “Natural Gas Markets: Leveraging the Production Revolution into an Industrial Renaissance.” (2013). International Technical Conference, Houston, TX. October 11.
122. “Natural Gas, Coal & Power Generation Issues and Trends.” (2013). Southeast Labor and Management Public Affairs Committee Conference, Chattanooga, Tennessee. September 27.
123. “Recent Trends in Pipeline Replacement Trackers.” (2013). National Association of State Utility Consumer Advocates Monthly Gas Committee Meeting. September 19.
124. Discussion Panelist (2013). Think About Energy Summit, America’s Natural Gas Alliance, Columbus Ohio. September 16-17.
125. “Future Test Years: Issues to Consider.” (2013). National Regulatory Research Institute, Teleseminar on Future Test Years. August 28.
126. “Industrial Development Outlook for Louisiana.” (2013). Louisiana Water Synergy Project Meetings, Jones Walker Law Firm, Baton Rouge, Louisiana. July 30.
127. “Natural Gas & Electric Power Coordination Issues and Challenges.” (2013). Utilities State Government Organization Conference, Pointe Clear, Alabama. July 9.
128. “Natural Gas Market Issues & Trends.” (2013). Western Conference of Public Service Commissioners, Santa Fe, New Mexico. June 3.

129. "Louisiana Unconventional Natural Gas and Industrial Redevelopment." (2013). Louisiana Chemical Association/Louisiana Chemical Industry Alliance Annual Legislative Conference, Baton Rouge, Louisiana. May 8.
130. "Infrastructure Cost Recovery Mechanism: Overview of Issues." (2013). Energy Bar Association Annual Meeting, Washington, D.C. May 1.
131. "GOM Offshore Oil and Gas." (2013). Energy Executive Roundtable, New Orleans, Louisiana. March 27.
132. "Louisiana Unconventional Natural Gas and Industrial Redevelopment." (2013). Risk Management Association Luncheon, March 21.
133. "Natural Gas Market Update and Emerging Issues." (2013). NASUCA Gas Committee Conference Call/Webinar, March 12.
134. "Unconventional Resources and Louisiana's Manufacturing Development Renaissance." (2013). Baton Rouge Press Club, De La Ronde Hall, Baton Rouge, LA, January 28.
135. "New Industrial Operations Leveraged by Unconventional Natural Gas." (2013) American Petroleum Institute-Louisiana Chapter. Lafayette, LA, Petroleum Club, January 14.
136. "What's Going on with Energy? How Unconventional Oil and Gas Development is Impacting Renewables, Efficiency, Power Markets, and All that Other Stuff." (2012). Atlanta Economics Club Monthly Meeting. Atlanta, GA. December 11.
137. "Trends, Issues, and Market Changes for Crude Oil and Natural Gas." (2012). East Iberville Community Advisory Panel Meeting. St. Gabriel, LA. September 26.
138. "Game Changers in Crude and Natural Gas Markets." (2012). Chevron Community Advisory Panel Meeting. Belle Chase, LA, September 17.
139. "The Outlook for Renewables in a Changing Power and Natural Gas Market." (2012). Louisiana Biofuels and Bioprocessing Summit. Baton Rouge, LA. September 11.
140. "The Changing Dynamics of Crude and Natural Gas Markets." (2012). Chalmette Refining Community Advisory Panel Meeting. Chalmette, LA, September 11.
141. "The Really Big Game Changer: Crude Oil Production from Shale Resources and the Tuscaloosa Marine Shale." (2012). Baton Rouge Chamber of Commerce Board Meeting. Baton Rouge, LA, June 27.
142. "The Impact of Changing Natural Gas Prices on Renewables and Energy Efficiency." (2012). NASUCA Gas Committee Conference Call/Webinar. 12 June 2012.
143. "Issues in Gas-Renewables Coordination: How Changes in Natural Gas Markets Potentially Impact Renewable Development" (2012). Energy Bar Association, Louisiana Chapter, Annual Meeting, New Orleans, LA. April 12, 2012.
144. "Issues in Natural Gas End-Uses: Are We Really Focusing on the Real Opportunities?" (2012). Energy Bar Association, Louisiana Chapter, Annual Meeting, New Orleans, LA. April 12, 2012.
145. "The Impact of Legacy Lawsuits on Conventional Oil and Gas Drilling in Louisiana." (2012). Louisiana Oil and Gas Association Annual Meeting, Lake Charles, LA. February 27, 2012.
146. "The Impact of Legacy Lawsuits on Conventional Oil and Gas Drilling in Louisiana." (2012). Louisiana Oil and Gas Association Annual Meeting. Lake Charles, Louisiana. February 27,

- 2012.
147. “Louisiana’s Unconventional Plays: Economic Opportunities, Policy Challenges.” Louisiana Mid-Continent Oil and Gas Association 2012 Annual Meeting. (2012) New Orleans, Louisiana. January 26, 2012.
  148. “EPA’s Recently Proposed Cross State Air Pollution Rule (“CSAPR”) and Its Impacts on Louisiana.” (2011). Bossier Chamber of Commerce. November 18, 2011.
  149. “Facilitating the Growth of America’s Natural Gas Advantage.” (2011). BASF U.S. Shale Gas Workshop Management Meeting. Florham Park, New Jersey. November 1, 2011.
  150. “CSAPR and EPA Regulations Impacting Louisiana Power Generation.” (2011). Air and Waste Management Association (Louisiana Section) Fall Conference. Environmental Focus 2011: a Multi-Media Forum. Baton Rouge, LA. October 25, 2011.
  151. “Natural Gas Trends and Impact on Industrial Development.” (2011). Central Gulf Coast Industrial Alliance Conference. Arthur R. Outlaw Convention Center. Mobile, AL. September 22, 2011.
  152. “Energy Market Changes and Policy Challenges.” (2011). Southeast Manpower Tripartite Alliance (“SEMTA”) Summer Conference. Nashville, TN September 2, 2011.
  153. “EPA Regulations, Rates & Costs: Implications for U.S. Ratepayers.” (2011). Workshop: “A Smarter Approach to Improving Our Environment.” 38<sup>th</sup> Annual American Legislative Exchange Council (“ALEC”) Meetings. New Orleans, LA. August 5, 2011.
  154. Panelist/Moderator. Workshop: “Why Wait? Start Energy Independence Today.” 38<sup>th</sup> Annual American Legislative Exchange Council (“ALEC”) Meetings. New Orleans, LA. August 4, 2011.
  155. “Facilitating the Growth of America’s Natural Gas Advantage.” Texas Chemical Council, Board of Directors Summer Meeting. San Antonio, TX. July 28, 2011.
  156. “Creating Ratepayer Benefits by Reconciling Recent Gas Supply Opportunities with Past Policy Initiatives.” National Association of State Utility Consumer Advocates (“NASUCA”), Monthly Gas Committee Meeting. July 12, 2011.
  157. “Energy Market Trends and Policies: Implications for Louisiana.” (2011). Lakeshore Lion’s Club Monthly Meeting. Baton Rouge, Louisiana. June 20, 2011.
  158. “America’s Natural Gas Advantage: Securing Benefits for Ratepayers Through Paradigm Shifts in Policy.” Southeastern Association of Regulatory Commissioners (“SEARUC”) Annual Meeting. Nashville, Tennessee. June 14, 2011.
  159. “Learning Together: Building Utility and Clean Energy Industry Partnerships in the Southeast.” (2011). American Solar Energy Society National Solar Conference. Raleigh Convention Center, Raleigh, North Carolina. May 20, 2011.
  160. “Louisiana Energy Outlook and Trends.” (2011). Executive Briefing. Consul General of Canada. LSU Center for Energy Studies, Baton Rouge, Louisiana. May 24, 2011.
  161. “Louisiana’s Natural Gas Advantage: Can We Hold It? Grow It? Or Do We Need to be Worrying About Other Problems?” (2011). Louisiana Chemical Association Annual Legislative Conference, Baton Rouge, Louisiana, May 5, 2011.
  162. “Energy Outlook and Trends: Implications for Louisiana.” (2011). Executive Briefing,

- Legislative Staff, Congressman William Cassidy. LSU Center for Energy Studies, Baton Rouge, Louisiana. March 25, 2011.
163. “Regulatory Issues in Inflation Adjustment Mechanisms and Allowances.” (2011). Gas Committee, National Association of State Utility Consumer Advocates (“NASUCA”). February 15, 2011.
  164. “Regulatory Issues in Inflation Adjustment Mechanisms and Allowances.” (2010). 2010 Annual Meeting, National Association of State Utility Consumer Advocates (“NASUCA”), Omni at CNN Center, Atlanta, Georgia, November 16, 2010.
  165. “How Current and Proposed Energy Policy Impacts Consumers and Ratepayers.” (2010). 122<sup>nd</sup> Annual Meeting, National Association of Regulatory Utility Commissioners (“NARUC”), Omni at CNN Center, Atlanta, Georgia, November 15, 2010.
  166. “Energy Outlook: Trends and Policies.” (2010). 2010 Tri-State Member Service Conference; Arkansas, Louisiana, and Mississippi Electric Cooperatives. L’Auberge du Lac Casino Resort, Lake Charles, Louisiana, October 14, 2010.
  167. “Deepwater Moratorium and Louisiana Impacts.” (2010). The Energy Council Annual Meeting. Gulf of Mexico Deepwater Horizon Accident, Response, and Policy. Beau Rivage Conference Center. Biloxi, Mississippi. September 25, 2010.
  168. “Overview on Offshore Drilling and Production Activities in the Aftermath of Deepwater Horizon.” (2010) Jones Walker Banking Symposium. The Oil Spill: What Will it Mean for Banks in the Region? New Orleans, Louisiana. August 31, 2010.
  169. “Long-Term Energy Sector Impacts from the Oil Spill.” (2010). Second Annual Louisiana Oil & Gas Symposium. The BP Gulf Oil Spill: Long-Term Impacts and Strategies. Baton Rouge Geological Society. August 16, 2010.
  170. “Overview and Issues Associated with the Deepwater Horizon Accident.” (2010). Global Interdependence Meeting on Energy Issues. Baton Rouge, LA. August 12, 2010.
  171. “Overview and Issues Associated with the Deepwater Horizon Accident.” (2010). Regional Roundtable Webinar. National Association for Business Economics. August 10, 2010.
  172. “Deepwater Moratorium: Overview of Impacts for Louisiana.” Louisiana Association of Business and Industry Meeting. Baton Rouge, LA. June 25, 2010.
  173. Moderator. Senior Executive Roundtable on Industrial Energy Efficiency. U.S. Department of Energy Conference on Industrial Efficiency. Office of Renewable Energy and Energy Efficiency. Royal Sonesta Hotel, New Orleans, LA. May 21, 2010.
  174. “The Energy Outlook: Trends and Policies Impacting Southeastern Natural Gas Supply and Demand Growth.” Second Annual Local Economic Analysis and Research Network (“LEARN”) Conference. Federal Reserve Bank of Atlanta. March 29, 2010.
  175. “Natural Gas Supply Issues: Gulf Coast Supply Trends and Implications for Louisiana.” Energy Bar Association, New Orleans Chapter Meeting. Jones Walker Law Firm. January 28, 2010, New Orleans, LA.
  176. “Potential Impacts of Federal Greenhouse Gas Legislation on Louisiana Industry.” LCA Government Affairs Committee Meeting. November 10, 2009. Baton Rouge, LA
  177. “Regulatory and Ratemaking Issues Associated with Cost and Revenue Tracker Mechanisms.” National Association of State Utility Consumer Advocates (“NASUCA”) Annual Meeting.

- November 10, 2009.
178. “Louisiana’s Stakes in the Greenhouse Gas Debate.” Louisiana Chemical Association and Louisiana Chemical Industry Alliance Annual Meeting: The Billing Dollar Budget Crisis: Catastrophe or Change? New Orleans, LA.
  179. “Gulf Coast Energy Outlook: Issues and Trends.” Women’s Energy Network, Louisiana Chapter. September 17, 2009. Baton Rouge, LA.
  180. “Gulf Coast Energy Outlook: Issues and Trends.” Natchez Area Association of Energy Service Companies. September 15, 2009, Natchez, MS.
  181. “The Small Picture: The Cost of Climate Change to Louisiana.” Louisiana Association of Business and Industry, U.S. Chamber of Commerce, Louisiana Oil and Gas Association, and LSU Center for Energy Studies Conference: Can Louisiana Make a Buck After Climate Change Legislation? August 21, 2009. Baton Rouge, LA.
  182. “Carbon Legislation and Clean Energy Markets: Policy and Impacts.” National Association of Conservation Districts, South Central Region Meeting. August 14, 2009. Baton Rouge, LA.
  183. “Evolving Carbon and Clean Energy Markets.” The Carbon Emissions Continuum: From Production to Consumption.” Jones Walker Law Firm and LSU Center for Energy Studies Workshop. June 23, 2009. Baton Rouge, LA
  184. “Potential Impacts of Cap and Trade on Louisiana Ratepayers: Preliminary Results.” (2009). Briefing before the Louisiana Public Service Commission. Business and Executive Meeting, May 12, 2009. Baton Rouge, LA.
  185. “Natural Gas Outlook.” (2009). Briefing before the Louisiana Public Service Commission. Business and Executive Meeting, May 12, 2009. Baton Rouge, LA.
  186. “Gulf Coast Energy Outlook: Issues and Trends.” (2009). ISA-Lafayette Technical Conference & Expo. Cajundome Conference Center. Lafayette, Louisiana. March 12, 2009.
  187. “The Cost of Energy Independence, Climate Change, and Clean Energy Initiatives on Utility Ratepayers.” (2009). National Association of Business Economics (NABE). 25<sup>th</sup> Annual Washington Economic Policy Conference: Restoring Financial and Economic Stability. Arlington, VA March 2, 2009.
  188. Panelist, “Expanding Exploration of the U.S. OCS” (2009). Deep Offshore Technology International Conference and Exhibition. PennWell. New Orleans, Louisiana. February 4, 2009.
  189. “Gulf Coast Energy Outlook.” (2008.) Atmos Energy Regional Management Meeting. Louisiana and Mississippi Division. New Orleans, Louisiana. October 8, 2008.
  190. “Background, Issues, and Trends in Underground Hydrocarbon Storage.” (2008). Presentation before the LSU Center for Energy Studies Industry Advisory Board Meeting. Baton Rouge, Louisiana. August 27, 2008.
  191. “Greenhouse Gas Regulations and Policy: Implications for Louisiana.” (2008). Presentation before the Praxair Customer Seminar. Houston, Texas, August 14, 2008.
  192. “Market and Regulatory Issues in Alternative Energy and Louisiana Initiatives.” (2008). Presentation before the 2008 Statewide Clean Cities Coalition Conference: Making Sense of Alternative Fuels and Advanced Technologies. New Orleans, Louisiana, March 27, 2008.



193. "Regulatory Issues in Rate Design, Incentives, and Energy Efficiency." (2007) Presentation before the New Hampshire Public Utilities Commission. Workshop on Energy Efficiency and Revenue Decoupling. November 7, 2007.
194. "Regulatory Issues for Consumer Advocates in Rate Design, Incentives, and Energy Efficiency." (2007). National Association of State Utility Consumer Advocates, Mid-Year Meeting. June 12, 2007.
195. "Regulatory and Policy Issues in Nuclear Power Plant Development." (2007). LSU Center for Energy Studies Industry Advisory Council Meeting. Baton Rouge, LA. March 23, 2007.
196. "Oil and Gas in the Gulf of Mexico: A North American Perspective." (2007). Canadian Consulate, Heads of Mission EnerNet Workshop, Houston, Texas. March 20, 2007.
197. "Regulatory Issues for Consumer Advocates in Rate Design, Incentives & Energy Efficiency." (2007). National Association of State Utility Consumer Advocates ("NASUCA") Gas Committee Monthly Meeting. February 13, 2006.
198. "Recent Trends in Natural Gas Markets." (2006). National Association of Regulatory Utility Commissioners, 118<sup>th</sup> Annual Convention. Miami, FL November 14, 2006.
199. "Energy Markets: Recent Trends, Issues & Outlook." (2006). Association of Energy Service Companies (AESC) Meeting. Petroleum Club, Lafayette, LA, November 8, 2006.
200. "Energy Outlook" (2006). National Business Economics Issues Council. Quarterly Meeting, Nashville, TN, November 1-2, 2006.
201. "Global and U.S. Energy Outlook." (2006). Energy Virginia Conference. Virginia Military Institute, Lexington, VA October 17, 2006.
202. "Interdependence of Critical Energy Infrastructure Systems." (2006). Cross Border Forum on Energy Issues: Security and Assurance of North American Energy Systems. Woodrow Wilson Center for International Scholars. Washington, DC, October 13, 2006.
203. "Determining the Economic Value of Coastal Preservation and Restoration on Critical Energy Infrastructure." (2006) The Economic and Market Impacts of Coastal Restoration: America's Wetland Economic Forum II. Washington, DC September 28, 2006.
204. "Relationships between Power and Other Critical Energy Infrastructure." (2006). Rebuilding the New Orleans Region: Infrastructure Systems and Technology Innovation Forum. United Engineering Foundation. New Orleans, LA, September 24-25, 2006.
205. "Outlook, Issues, and Trends in Energy Supplies and Prices." (2006.) Presentation to the Southern States Energy Board, Associate Members Meeting. New Orleans, Louisiana. July 14, 2006.
206. "Energy Sector Outlook." (2006). Baton Rouge Country Club Meeting. Baton Rouge, Louisiana. July 11, 2006.
207. "Oil and Gas Industry Post 2005 Storm Events." (2006). American Petroleum Institute, Teche Chapter. Production, Operations, and Regulations Annual Meeting. Lafayette, Louisiana. June 29, 2006.
208. "Concentration of Energy Infrastructure in Hurricane Regions." (2006). Presentation before the National Commission on Energy Policy Forum: Ending the Stalemate on LNG Facility Siting. Washington, DC. June 21, 2006.

209. "LNG—A Premier." (2006). Presentation Given to the U.S. Department of Energy's "LNG Forums." Los Angeles, California. June 1, 2006.
210. "Regional Energy Infrastructure, Production and Outlook." (2006). Executive Briefing for Board of Directors, Louisiana Oil and Gas Plc., Enhanced Exploration, Inc. and Energy Self-Service, Inc. Covington, Louisiana, May 12, 2006.
211. "The Impacts of the Recent Hurricane Season on Energy Production and Infrastructure and Future Outlook." Presentation before the Industrial Energy Technology Conference 2006. New Orleans, Louisiana, May 9, 2006.
212. "Update on Regional Energy Infrastructure and Production." (2006). Executive Briefing for Delegation Participating in U.S. Department of Commerce Gulf Coast Business Investment Mission. Baton Rouge, Louisiana May 5, 2006.
213. "Hurricane Impacts on Energy Production and Infrastructure." (2006). Presentation before the Interstate Natural Gas Association of America Mid-Year Meeting. Hyatt Regency Hill Country. April 21, 2006.
214. "LNG—A Premier." Presentation Given to the U.S. Department of Energy's "LNG Forums." Astoria, Washington. April 28, 2006.
215. Natural Gas Market Outlook. Invited Presentation Given to the Georgia Public Service Commission and Staff. Georgia Institute of Technology, Atlanta, Georgia. March 10, 2006.
216. The Impacts of Hurricanes Katrina and Rita on Louisiana's Energy Industry. Presentation to the Louisiana Economic Development Council. Baton Rouge, Louisiana. March 8, 2006.
217. Energy Markets: Hurricane Impacts and Outlook. Presentation to the 2006 Louisiana Independent Oil and Gas Association Annual Conference. L'Auberge du Lac Resort and Casino. Lake Charles, Louisiana. March 6, 2006
218. Energy Market Outlook and Update on Hurricane Damage to Energy Infrastructure. Presentation to the Energy Council 2005 Global Energy and Environmental Issues Conference. Santa Fe, New Mexico, December 10, 2005.
219. "Putting Our Energy Infrastructure Back Together Again." Presentation Before the 117<sup>th</sup> Annual Convention of the National Association of Regulatory Utility Commissioners (NARUC). November 15, 2005. Palm Springs, CA
220. "Hurricanes and the Outlook for Energy Markets." Presentation before the Baton Rouge Rotary Club. November 9, 2005, Baton Rouge, LA.
221. "Hurricanes, Energy Supplies and Prices." Presentation before the Louisiana Department of Natural Resources and Atchafalaya Basin Committee Meeting. November 8, 2005. Baton Rouge, LA.
222. "The Impact of the Recent Hurricane's on Louisiana's Energy Industry." Presentation before the Louisiana Independent Oil and Gas Association Board of Directors Meeting. November 8, 2005. Baton Rouge, LA.
223. "The Impact of the Recent Hurricanes on Louisiana's Infrastructure and National Energy Markets." Presentation before the Baton Rouge City Club Distinguished Speaker Series. October 13, 2005. Baton Rouge, LA.
224. "The Impact of the Recent Hurricanes on Louisiana's Infrastructure and National Energy Markets." Presentation before Powering Up: A Discussion About the Future of Louisiana's

- Energy Industry. Special Lecture Series Sponsored by the Kean Miller Law Firm. October 13, 2005. Baton Rouge, LA.
225. “The Impact of Hurricane Katrina on Louisiana’s Energy Infrastructure and National Energy Markets.” Special Lecture on Hurricane Impacts, LSU Center for Energy Studies, September 29, 2005.
226. “Louisiana Power Industry Overview.” Presentation before the Clean Air Interstate Rule Implementation Stakeholders Meeting. August 11, 2005. Louisiana Department of Environmental Quality.
227. “CES 2005 Legislative Support and Outlook for Energy Markets and Policy.” Presentation before the LMOGA/LCA Annual Post-Session Legislative Committee Meeting. August 10-13, 2005. Perdido Key, Florida.
228. “Electric Restructuring: Past, Present, and Future.” Presentation to the Southeastern Association of Tax Administrators Annual Conference. Sheraton Hotel and Conference Facility. New Orleans, LA July 12, 2005.
229. “The Outlook for Energy.” Lagniappe Studies Continuing Education Course. Baton Rouge, LA. July 11, 2005.
230. “The Outlook for Energy.” Sunshine Rotary Club. Baton Rouge, LA. April 27, 2005.
231. “Background and Overview of LNG Development.” Energy Council Workshop on LNG/CNG. Biloxi, Ms: Beau Rivage Resort and Hotel, April 9, 2005.
232. “Natural Gas Supply, Prices, and LNG: Implications for Louisiana Industry.” Cytec Corporation Community Advisory Panel. Fortier, LA January 14, 2005.
233. “The Economic Opportunities for a Limited Industrial Retail Choice Plan.” Louisiana Department of Economic Development. Baton Rouge, Louisiana. November 19, 2004.
234. “Energy Issues for Industrial Customers of Gas and Power.” Louisiana Association of Business and Industry, Energy Council Meeting. Baton Rouge, Louisiana. October 11, 2004.
235. “Energy Issues for Industrial Customers of Gas and Power.” Annual Meeting of the Louisiana Chemical Association and the Louisiana Chemical Industry Alliance. Point Clear, Alabama. October 8, 2004.
236. “Energy Issues for Industrial Customers of Gas and Power.” American Institute of Chemical Engineers – New Orleans Section. New Orleans, LA. September 22, 2004.
237. “Natural Gas Supply, Prices and LNG: Implications for Louisiana Industry.” Dow Chemical Company Community Advisory Panel Meeting. Plaquemine, LA. August 9, 2004.
238. “Energy Issues for Industrial Customers of Gas and Power.” Louisiana Chemical Association Post-Legislative Meeting. Springfield, LA. August 9, 2004.
239. “LNG In Louisiana.” Joint Meeting of the Louisiana Economic Development Council and the Governors Cabinet Advisory Council. Baton Rouge, LA. August 5, 2004.
240. “Louisiana Energy Issues.” Louisiana Mid-Continent Oil and Gas Association Post Legislative Meetings. Sandestin, Florida. July 28, 2004.
241. “The Gulf South: Economic Opportunities Related to LNG.” Presentation before the Energy Council’s 2004 State and Provincial Energy and Environmental Trends Conference. Point Clear, AL, June 26, 2004.

242. “Natural Gas and LNG Issues for Louisiana.” Presentation before the Rhodia Community Advisory Panel. May 20, 2004, Baton Rouge, LA.
243. “The Economic Opportunities for LNG Development in Louisiana.” Presentation before the Louisiana Chemical Association Plant Managers Meeting. May 27, 2004. Baton Rouge, LA.
244. “The Economic Opportunities for LNG Development in Louisiana.” Presentation before the Louisiana Chemical Association/Louisiana Chemical Industry Alliance Legislative Conference. May 26, 2004. Baton Rouge, LA.
245. “The Economic Opportunities for LNG Development in Louisiana.” Presentation before the Petrochemical Industry Cluster, Greater New Orleans, Inc. May 19, 2004, Destrehan, LA.
246. “Industry Development Issues for Louisiana: LNG, Retail Choice, and Energy.” Presentation before the LSU Center for Energy Studies Industry Associates. May 14, 2004, Baton Rouge, LA.
247. “The Economic Opportunities for LNG Development in Louisiana.” Presentation before the Board of Directors, Greater New Orleans, Inc. May 13, 2004, New Orleans, LA.
248. “Natural Gas Outlook: Trends and Issues for Louisiana.” Presentation before the Louisiana Joint Agricultural Association Meetings. January 14, 2004, Hotel Acadiana, Lafayette, Louisiana.
249. “Natural Gas Outlook” Presentation before the St. James Parish Community Advisory Panel Meeting. January 7, 2004, IMC Production Facility, Convent, Louisiana.
250. “Competitive Bidding in the Electric Power Industry.” Presentation before the Association of Energy Engineers. Business Energy Solutions Expo. December 11-12, 2003, New Orleans, Louisiana.
251. “Regional Transmission Organization in the South: The Demise of SeTrans” Presentation before the LSU Center for Energy Studies Industry Associates Advisory Council Meeting. December 9, 2003. Baton Rouge, Louisiana.
252. “Affordable Energy: The Key Component to a Strong Economy.” Presentation before the National Association of Regulatory Utility Commissioners (“NARUC”), November 18, 2003, Atlanta, Georgia.
253. “Natural Gas Outlook.” Presentation before the Louisiana Chemical Association, October 17, 2003, Pointe Clear, Alabama.
254. “Issues and Opportunities with Distributed Energy Resources.” Presentation before the Louisiana Biomass Council. April 17, 2003, Baton Rouge, Louisiana.
255. “What’s Happened to the Merchant Energy Industry? Issues, Challenges, and Outlook” Presentation before the LSU Center for Energy Studies Industry Associates Advisory Council Meeting. November 12, 2002. Baton Rouge, Louisiana.
256. “An Introduction to Distributed Energy Resources.” Presentation before the U.S. Department of Energy, Office of Renewable Energy and Energy Efficiency, State Energy Program/Rebuild America Conference, August 1, 2002, New Orleans, Louisiana.
257. “Merchant Energy Development Issues in Louisiana.” Presentation before the Program Committee of the Center for Legislative, Energy, and Environmental Research (CLEER), Energy Council. April 19, 2002.

258. "Merchant Power Plants and Deregulation: Issues and Impacts." Presentation before 24<sup>th</sup> Annual Conference on Waste and the Environment. Sponsored by the Louisiana Department of Environmental Quality. Lafayette, Louisiana, Cajundome. March 18, 2002.
259. "Merchant Power and Deregulation: Issues and Impacts." Presentation before the Air and Waste Management Association Annual Meeting. Baton Rouge, LA, November 15, 2001.
260. "Moving to the Front of the Lines: The Economic Impact of Independent Power Production in Louisiana." Presentation before the LSU Center for Energy Studies Merchant Power Generation and Transmission Conference, Baton Rouge, LA. October 11, 2001.
261. "Economic Impacts of Merchant Power Plant Development in Mississippi." Presentation before the U.S. Oil and Gas Association Annual Oil and Gas Forum. Jackson, Mississippi. October 10, 2001.
262. "Economic Opportunities for Merchant Power Development in the South." Presentation before the Southern Governor's Association/Southern State Energy Board Meetings. Lexington, KY. September 9, 2001.
263. "The Changing Nature of the Electric Power Business in Louisiana." Presentation before the Louisiana Department of Environmental Quality. Baton Rouge, LA, August 27, 2001.
264. "Power Business in Louisiana: Background and Issues." Presentation before the Louisiana Interagency Group on Merchant Power Development. Baton Rouge, LA, July 16, 2001.
265. "The Changing Nature of the Electric Power Business in Louisiana: Background and Issues." Presentation before the Louisiana Office of the Governor. Baton Rouge, LA, July 16, 2001.
266. "The Changing Nature of the Electric Power Business in Louisiana: Background and Issues." Presentation before the Louisiana Department of Economic Development. Baton Rouge, LA, July 3, 2001.
267. "The Economic Impacts of Merchant Power Plant Development In Mississippi." Presentation before the Mississippi Public Service Commission. Jackson, Mississippi, March 20, 2001.
268. "Energy Conservation and Electric Restructuring." With Ritchie D. Priddy. Presentation before the Louisiana Department of Natural Resources. Baton Rouge, Louisiana, October 23, 2000.
269. "Pricing and Regulatory Issues Associated with Distributed Energy." Joint Conference by Econ One Research, Inc., the Louisiana State University Distributed Energy Resources Initiative, and the University of Houston Energy Institute: "Is the Window Closing for Distributed Energy?" Houston, Texas, October 13, 2000.
270. "Electric Reliability and Merchant Power Development Issues." Technical Meetings of the Louisiana Public Service Commission. Baton Rouge, LA. August 29, 2000.
271. "A Introduction to Distributed Energy Resources." Summer Meetings, Southeastern Association of Regulatory Utility Commissioners (SEARUC). New Orleans, LA. June 27, 2000.
272. Roundtable Moderator/Discussant. Mid-South Electric Reliability Summit. U.S. Department of Energy. New Orleans, Louisiana. April 24, 2000.
273. "Electricity 101: Definitions, Precedents, and Issues." Energy Council's 2000 Federal Energy and Environmental Matters Conference. Loews L'Enfant Plaza Hotel, Washington, D.C. March 11-13, 2000.

274. "LSU/CES Distributed Energy Resources Initiatives." Los Alamos National Laboratories. Office of Energy and Sustainable Systems. Los Alamos, New Mexico. February 16, 2000.
275. "Distributed Energy Resources Initiatives." Louisiana State University, Center for Energy Studies Industry Associates Meeting. Baton Rouge, Louisiana. December 15, 1999.
276. "Merchant Power Opportunities in Louisiana." Louisiana Mid-Continent Oil and Gas Association (LMOGA) Power Generation Committee Meetings. Baton Rouge, Louisiana. November 10, 1999.
277. Roundtable Discussant. "Environmental Regulation in a Restructured Market" The Big E: How to Successfully Manage the Environment in the Era of Competitive Energy. PUR Conference. New Orleans, Louisiana. May 24, 1999.
278. "The Political Economy of Electric Restructuring In the South" Southeastern Electric Exchange, Rate Section Annual Conference. New Orleans, Louisiana. May 7, 1999.
279. "The Dynamics of Electric Restructuring in Louisiana." Joint Meeting of the American Association of Energy Engineers and the International Association of Facilities Managers. Metairie, Louisiana. April 29, 1999.
280. "The Implications of Electric Restructuring on Independent Oil and Gas Operations." Petroleum Technology Transfer Council Workshop: Electrical Power Cost Reduction Methods in Oil and Gas Field Operations. Lafayette, Louisiana, March 24, 1999.
281. "What's Happened to Electricity Restructuring in Louisiana?" Louisiana State University, Center for Energy Studies Industry Associates Meeting. March 22, 1999.
282. "A Short Course on Electric Restructuring." Central Louisiana Electric Company. Sales and Marketing Division. Mandeville, Louisiana, October 22, 1998.
283. "The Implications of Electric Restructuring on Independent Oil and Gas Operations." Petroleum Technology Transfer Council Workshop: Electrical Power Cost Reduction Methods in Oil and Gas Field Operations. Shreveport, Louisiana, October 13, 1998.
284. "How Will Utility Deregulation Affect Tourism." Louisiana Travel Promotion Association Annual Meeting, Alexandria, Louisiana. January 15, 1998.
285. "Reflections and Predictions on Electric Utility Restructuring in Louisiana." With Fred I. Denny. Louisiana State University, Center for Energy Studies Industry Associates Meeting. November 20, 1997.
286. "Electric Utility Restructuring in Louisiana." Hammond Chamber of Commerce, Hammond, Louisiana. October 30, 1997.
287. "Electric Utility Restructuring." Louisiana Association of Energy Engineers. Baton Rouge, Louisiana. September 11, 1997.
288. "Electric Utility Restructuring: Issues and Trends for Louisiana." Opelousas Chamber of Commerce, Opelousas, Louisiana. June 24, 1997.
289. "The Electric Utility Restructuring Debate In Louisiana: An Overview of the Issues." Annual Conference of the Public Affairs Research Council of Louisiana. Baton Rouge, Louisiana. March 25, 1997.

290. “Electric Restructuring: Louisiana Issues and Outlook for 1997.” Louisiana State University, Center for Energy Studies Industry Associates Meeting, Baton Rouge, Louisiana, January 15, 1997.
291. “Restructuring the Electric Utility Industry.” Louisiana Propane Gas Association Annual Meeting, Alexandria, Louisiana, December 12, 1996.
292. “Deregulating the Electric Utility Industry.” Eighth Annual Economic Development Summit, Baton Rouge, Louisiana, November 21, 1996.
293. “Electric Utility Restructuring in Louisiana.” Jennings Rotary Club, Jennings, Louisiana, November 19, 1996.
294. “Electric Utility Restructuring in Louisiana.” Entergy Services, Transmission and Distribution Division, Energy Centre, New Orleans, Louisiana, September 12, 1996
295. “Electric Utility Restructuring” Louisiana Electric Cooperative Association, Baton Rouge, Louisiana, August 27, 1996.
296. “Electric Utility Restructuring -- Background and Overview.” Louisiana Public Service Commission, Baton Rouge, Louisiana, August 14, 1996.
297. “Electric Utility Restructuring.” Sunshine Rotary Club Meetings, Baton Rouge, Louisiana, August 8, 1996.
298. Roundtable Moderator, “Stakeholder Perspectives on Electric Utility Stranded Costs.” Louisiana State University, Center for Energy Studies Seminar on Electric Utility Restructuring in Louisiana, Baton Rouge, May 29, 1996.
299. Panelist, “Deregulation and Competition.” American Nuclear Society: Second Annual Joint Louisiana and Mississippi Section Meetings, Baton Rouge, Louisiana, April 20, 1996.

**EXPERT WITNESS, LEGISLATIVE, AND PUBLIC TESTIMONY; EXPERT REPORTS, RECOMMENDATIONS, AND AFFIDAVITS**

1. Expert Testimony. Cause No. 46011. (2024). Before the State of Indiana, Indiana Utility Regulatory Commission. *Petition of Ohio Valley Gas, Inc. for (1) authority to increase its rates and charges for gas utility service, (2) approval of new schedules of rates and charges, (3) approval of decoupling through a new sales reconciliation component rider, and (4) approval of necessary and appropriate accounting relief and other requests.* On Behalf of Indiana Office of Utility Consumer Counselor. Issues: decoupling, sales reconciliation component rider.
2. Expert Testimony. Docket No. 2024-UA-42. (2024). Before the Mississippi Public Service Commission. *Joint Application of Centerpoint Energy Resources Corp. and Delta Utilities MS, LLC for all necessary authorizations and approvals for Delta Utilities MS, LLC to acquire the assets of Centerpoint Energy Resources Corp. and for approval of a certificate of public convenience and necessity for Delta Utilities MS, LLC, and for related relief.* On Behalf of Delta Utilities MS, LLC. Issues: economic benefits, ratemaking, other benefits.
3. Expert Testimony. Docket No. S-37187. (2024). Before the Louisiana Public Service Commission. *Delta Utilities No. LA, LLC, Delta Utilities S. LA., and Centerpoint Energy Resources Corp. Ex. Parte. In RE : Application for authority to operate as a local distribution company and incur indebtedness and joint application for approval for transfer and acquisition of local distribution company assets and related relief.* On Behalf of Delta Utilities No. LA, LLC. Issues: economic benefits, ratemaking, other benefits.

4. Expert Testimony. D.P.U. 23-150. (2024). Before the Commonwealth of Massachusetts Department of Public Utilities. *Petition of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid Pursuant to G.L. c. 164 § 94 and 220 C.M.R. 5.00 for Approval of an Increase in Base Distribution Rates and Approval of a Performance-Based Ratemaking Plan*. On Behalf of the Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy. Issues: capital tracker, Y-factor, IDRF, PBR, alternative regulation, benchmarking analysis.
5. Expert Testimony. Cause No. 45990. (2024). Before the Indiana Utility Regulatory Commission. *Verified Petition of Southern Indiana Gas and Electric Company D/B/A Centerpoint Energy Indiana South (“CEI South”) for (1) Authority to modify its rates and charges for electric utility service through a phase in of rates (2) approval of new schedules of rates and charges and new and revised riders, including but not limited to a new tax adjustment rider and a new green power rider (3) approval of a critical peak pricing (“CPP”) pilot program, (4) approval of revised depreciation rates applicable to electric and common plant in service, (5) approval of necessary and appropriate accounting relief, including authority to capitalize as rate base all cloud computing costs and defer to a regulatory asset amounts not already included in base rates that are incurred for third-party cloud computing arrangements, and (6) approval of an alternative regulatory plant granting CEI South a waiver from 170 IAC 4-1-16(f) to allow for remote disconnection for non-payment*. On Behalf of Indiana Office of Utility Consumer Counselor. Issues: proposed rate increases, cost of service study, minimum system study, revenue distribution, rate design, TOU-CPP pilot.
6. Expert Testimony. Cause No. 45967. (2024). Before the Indiana Utility Regulatory Commission. *Petition of Northern Indiana Public Service Company LLC Pursuant to Ind. Code §§ 8-1-2-42, 8-1-2-42.7 and 8-1-2-61 for (1) authority to modify its retail rates and charges for gas utility service through a phase in of rates; (2) approval of new schedules of rates and charges, general rule and regulations, and riders (both existing and new); (3) approval of a new sales reconciliation adjustment mechanism; (4) approval of revised gas depreciation rates applicable to its gas plant in service; (5) approval of necessary and appropriate accounting relief, including but not limited to approval of certain deferral mechanisms for pensions, other post-retirement benefits and line locate expenses; and (6) to the extent necessary, approval of any of the relief requested herein pursuant to Ind. Code Ch. 8-1-2-5*. On Behalf of Indiana Office of Utility Consumer Counselor. Issues: sales reconciliation adjustment.
7. Expert Testimony. F.C. No. 1176. (2024). Before the Public Service Commission of the District of Columbia. *In the Matter of the Application of Potomac Electric Power Company for Authority to Implement a Multiyear Rate Plan for Electric Distribution Service in the District of Columbia*. On Behalf of the Office of the People’s Counsel for the District of Columbia. Issues: affordability, revenue distribution, rate design, multi-year rate planning, bill stabilization adjustment.
8. Expert Testimony. Case No. 23-0460-E-42T (2023). Before the Public Service Commission of West Virginia Charleston. *In the Matter of Monongahela Power Company and the Potomac Edison Company rule 42T tariff filing to increase rates and charges*. On Behalf of the Consumer Advocate Division of the Public Service Commission of West Virginia. Issues: cost of service, zero intercept study, revenue allocation, rate design, net energy metering rider.
9. Expert Testimony. Docket No. DPU 23-81. (2023). Before the Commonwealth of Massachusetts Department of Public Utilities. *Petition of Fitchburg Gas and Electric Light Company d/b/a Unitil (Gas Division), pursuant to G.L. c. 164, § 94 and 220 CMR 5.00, for*



- Approval of a General Increase in Base Distribution Rates for Gas Service and a Performance-Based Ratemaking Plan.* On Behalf of the Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy. Direct and Surrebuttal. Issues: alternative regulation performance-based ratemaking, cost of service, revenue distribution, rate design.
10. Expert Testimony. Docket No. DPU 23-80. (2023). Before the Commonwealth of Massachusetts Department of Public Utilities. *Petition of Fitchburg Gas and Electric Light Company d/b/a Unutil (Electric Division), pursuant to G.L. c. 164, § 94 and 220 CMR 5.00, for Approval of a General Increase in Base Distribution Rates for Electric Service and a Performance-Based Ratemaking Plan.* On Behalf of the Massachusetts Office of the Attorney General, Office of Ratepayer Advocacy. Direct and Surrebuttal. Issues: alternative regulation performance-based ratemaking, cost of service, revenue distribution, rate design.
  11. Expert Testimony. Case No. 23-03803-W-42T and 23-0384-S-42T (2023). Before the Public Service Commission of West Virginia Charleston. In the Matter of West Virginia-America Water Company rule 42T application to increase rates and charges. On Behalf of the Consumer Advocate Division of the Public Service Commission of West Virginia. Issues: revenue distribution, rate design, affordability, service quality.
  12. Expert Testimony. Cause No. 45933 (2023). Before the Indiana Utility Regulatory Commission. *Petition of Indiana Michigan Power Company an Indiana Corporation, for authority to increase rates and charges for electric utility service through a phase in rate adjustment; and for approval of related relief including: (1) revised depreciation rates, including cost of removal less salvage, and updated depreciation expense; (2) accounting relief, including deferrals and amortization; (3) inclusion of capital investment; (4) rate adjustment mechanism proposals, including new grant projects rider and modified tax rider; (5) a voluntary residential customer powerpay program; (6) waiver or declination of jurisdiction with respect to certain rules to facilitate implementation of the powerpay program; (7) cost recovery for cook plant subsequent license renewal evaluation project; and (8) new schedules of rates, rules and regulations.* On Behalf of Indiana Office of Utility Consumer Counselor. Issues: cost of service, rate design, revenue distribution, service fees.
  13. Expert Report. (2023). *Alternative regulation deficiencies and potential ratepayer harms.* On Behalf of the Office of the Consumer Advocate of Iowa. October 3, 2023.
  14. Expert Testimony. Docket No. 2023.06.057. (2023). Before the Public Service Commission of the State of Montana. *In the Matter of Energy West Montana's Application for Approval of Gas Cost Hedging Plan for West Yellowstone.* On Behalf of the Montana Consumer Counsel. Issues: gas hedging program.
  15. Legislative Testimony. (2023). Ratepayer harms from alternative regulation in Oklahoma. Appearing on the Behalf of the Petroleum Alliance of Oklahoma. October 23, 2023.
  16. Expert Testimony. Cause No. 45911. (2023). Before the State of Indiana Utility Regulatory Commission. *Petition of Indianapolis Power & Light Company D/B/A AES Indiana ("AES Indiana") for authority to increase rates and charges for electric utility service, and for approval of related relief, including (1) revised depreciation rates, (2) accounting relief, including deferrals and amortizations, (3) inclusion of capital investments, (4) rate adjustment mechanism proposals, including new economic development rider, (5) remote disconnect/reconnect process and (6) new schedules of rates, rules and regulations for service.* On Behalf of Indiana Office of Utility Consumer Counselor. Direct and Cross-Answering. Issues: allocated cost of service, revenue distribution, rate design, trackers.

17. Expert Testimony. Docket No. 23-06007. (2023). Before the Public Utilities Commission of Nevada. *In the Matter of the Application by Nevada Power Company D/B/A NV Energy, filed pursuant to NRS 704.110(3) and NRS 704.110(4), addressing its annual revenue requirement for general rates charged to all classes of electric customers.* On Behalf of the Nevada Bureau of Consumer Protection. Issues: marginal cost of service study, embedded cost of service study, revenue distribution, rate design.
18. Expert Testimony. Docket No. UE-230172. (2023). Before the Washington Utilities and Transportation Commission. *Washington Utilities and Transportation Commission, Complainant v. Pacificorp dba Pacific Power & Light Company, Respondent.* On Behalf of the Washington State Office of the Attorney General Public Counsel Unit. Issues: rate design, revenue distribution, cost of service.
19. Expert Testimony. Case No. U-21389. (2023). Before the Michigan Public Service Commission. *In the Matter of the Application of Consumers Energy Company for Authority to Increase its Rates for the Generation and Distribution of Electricity and for other Relief.* On Behalf of the Michigan Department of the Attorney General. Issues: capital expenditure adjustments, overview of proposal.
20. Expert Report. Case No. 22-1094-WW-AIR. (2023). *Audit of the Application to Increase Rates of Aqua Ohio, Inc. For the Period July 1, 2022 through June 30, 2023.* Prepared for the Public Utilities Commission of Ohio. Issues: cost of service, billing determinants, revenue distribution, rate design.
21. Expert Report. Case No. 22-1096-ST-AIR. (2023). *Audit of the Application to Increase Rates of Aqua Ohio Wastewater, Inc. For the period July 1, 2022 through June 30, 2023.* Prepared for the Public Utilities Commission of Ohio. Issues: cost of service, billing determinants, revenue distribution, rate design.
22. Expert Report. *Analysis of the effectiveness and ratepayer impacts regarding the Natural Gas Rate Stabilization Act of 2005. (S.C. Code Ann. Section 58-5-410).* On Behalf of the South Carolina Department of Consumer Affairs. July 27, 2023.
23. Expert Testimony. Docket No. 2023-70-G. (2023). Before the Public Service Commission of South Carolina. *In the Matter of: Dominion Energy South Carolina, Inc's application for adjustments in its natural gas rate schedules and tariffs.* On Behalf of the South Carolina Department of Consumer Affairs. Issues: revenue credit, revenue distribution, rate design. Direct and Surrebuttal.
24. Expert Testimony. Docket No. E-01345A-22-0144. (2023). Before the Arizona Corporation Commission. *In the Matter of the Application of Arizona Public Service Company for a hearing to determine the fair value of the utility property of the company for ratemaking purposes, to fix a just and reasonable rate of return thereon, and to approve rate schedules designed to develop such return. On Behalf of the Utilities Division Arizona Corporation Commission.* Issues: cost of service, revenue distribution, rate design. Direct and Surrebuttal.
25. Expert Testimony. Docket No. 23-0068 (consol.) 23-0069. (2023). Before the Illinois Commerce Commission. *North Shore Gas Company, The Peoples Gas Light and Coke Company Proposed general increase in rates and revisions to service classifications, riders and terms and conditions of service.* On Behalf of the People of the State of Illinois. Issues: integrity management, infrastructure metrics, natural gas policy, state gas policy.
26. Expert Testimony. Docket No. 23-067. (2023). Before the Illinois Commerce Commission.

- Ameren Illinois Company Proposed general increase in gas delivery service rates.* On Behalf of the Illinois Attorney General. Issues: integrity management, infrastructure metrics, natural gas policy, state gas policy.
27. Expert Testimony. Docket No. 23-066. (2023). Before the Illinois Commerce Commission. *Northern Illinois Gas Company d/b/a Nicor Gas Company Proposed general increase in gas rates.* On Behalf of the People of the State of Illinois. Issues: integrity management, infrastructure metrics, natural gas policy, state gas policy.
  28. Expert Testimony. Docket No. U-22-081. (2023). Before the Regulatory Commission of Alaska. *In the Matter of the Revenue Requirement Study Designated as TA334-4 Filed by Enstar Natural Gas Company, A Division of SEMCO Energy, Inc.* On Behalf of the Attorney General, Regulatory Affairs & Public Advocacy Section. Issues: cost of service, rate design, revenue distribution.
  29. Expert Testimony. Docket No. U-22-078. (2023). Before the Regulatory Commission of Alaska. *In the Matter of the Revenue Requirement Study and Tariff Filing Designated as TA510-1 Filed by Alaska Electric Light & Power Company.* On Behalf of the Office of the Attorney General, Regulatory Affairs & Public Advocacy Section. Issues: cost of service, rate design, seasonal rates, revenue allocation, customer charge.
  30. Expert Testimony. Docket No. 2022.11.099. (2023). Before the Department of Public Service Regulation. *In the Matter of Montana-Dakota Utilities Co. for Authority to Establish Increased Rates for Electric Service.* On Behalf of the Montana Consumer Counsel. Direct and Cross-Answering. Issues: rate increase, cost of service study, marginal cost of service, revenue allocation, rate design.
  31. Expert Testimony. Docket No. U-22-078. (2023). Before the Regulatory Commission of Alaska. *In the Matter of the Revenue Requirement Study and Tariff Filing Designated as TA510-1 Filed by Alaska Electric Light & Power Company.* On Behalf of the Office of the Attorney General, Regulatory Affairs & Public Advocacy Section. Issues: rate design, cost of service, revenue allocation, seasonal rates.
  32. Expert Testimony. Docket No. U-21193. (2023). Before the Michigan Public Service Commission. *In the matter of the Application of DTE Electric Company for Approval of its Integrated Resource Plan pursuant to MCL 460.6t, and for other relief.* On Behalf of the Michigan Department of the Attorney General. Issues: Resource planning, coal retirements, asset amortization, financial compensation mechanism.
  33. Expert Testimony. Docket No. RP22-1033. (2023). Before the Federal Energy Regulatory Commission. *Northern Natural Gas Company.* On Behalf of the Northern Municipal Distributors Group and the Midwest Region Gas Task Force Association. Issues: tariff provisions, rate analysis, discount adjustment.
  34. Expert Testimony. Docket No. 22-061-U. (2023). Before the Arkansas Public Service Commission. *In the Matter of an Investigation into Potential Cost Shifting Associated with Net Metering.* On Behalf of the Office of Tim Griffin, Attorney General of Arkansas. Issues: policy, net metering background.
  35. Expert Testimony. Docket No. 22F-0263EG. (2023). Before the Public Utility Commission of the State of Colorado. *Olson's Greenhouses of Colorado, LLC. Complainant, v. Public Service Company of Colorado Respondent.* On Behalf of Olson's Greenhouses of Colorado, LLC. Issues: reliability, system upgrades, weather normalization.

36. Expert Testimony. Docket No. 2022.07.078. (2022). Before the Public Service Commission of the State of Montana. *In the Matter of NorthWestern Energy's Application for Authority to Increase Retail Electric and Natural Gas Utility Rates and for Approval of Electric and Natural Gas Service Schedules and Rules and Allocated Cost of Service and Rate Design*. On Behalf of the Montana Consumer Counsel. Direct and Cross-Intervenor. Issues: riders, fixed cost recovery mechanism, power cost adjustment, cost of service, revenue distribution.
37. Expert Testimony. Docket No 2022-254-E. (2022). Before the Public Service Commission of South Carolina. *In the Matter of: Application of Duke Energy Progress, LLC for Authority to Adjust and Increase its Electric Rates and Charges*. On Behalf of South Carolina Department of Consumer Affairs. Direct and Surrebuttal. Issues: Cost of service, revenue allocation, rate design.
38. Expert Testimony Docket No. 22-06014. (2022). *Before the Public Utilities Commission of Nevada. In the Matter of the Application by Sierra Pacific Power Company D/B/A NV Energy, filed pursuant to NRS 704.110(3) and NRS 704.110(4), addressing its annual revenue requirement for general rates charged to all classes of electric customers*. On Behalf of the Nevada Bureau of Consumer Protection. Issues: rate design, cost of services, marginal cost of service, revenue distribution.
39. Expert Testimony Docket No. 2022.06.067. (2022). *Before the Public Service Commission of the State of Montana. In RE NorthWestern Energy's Application for an Advanced Metering Opt-Out Tariff*. On Behalf of the Montana Consumer Counsel. Direct and Rebuttal. Issues: meter issues, opt-out fees, tariffs options.
40. Expert Testimony Docket No. 16-036-FR. (2022). *Before the Arkansas Public Service Commission. In the Matter of the Formula Rate Plan Filings of Entergy Arkansas, INC., Pursuant to APSC Docket NO. 15-015-U. On Behalf of the Arkansas Attorney General Leslie Rutledge*. Issues: Rate design, netting adjustment, performance standards, projected year adjustments.
41. Expert Testimony Formal Case No. 1169. (2022). *Before the Public Service Commission of the District of Columbia. In the Matter of the application of Washington Gas Light Company for authority to increase existing rates and charges for gas service*. On Behalf of the People's Counsel for the District of Columbia. Direct and Rebuttal. Issues: Revenue allocation, weather normalization, rate design.
42. Expert Testimony Case No. U-21224. (2022). *Before the Michigan Public Service Commission. In the Matter of the Application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity and for other relief*. On Behalf of the Michigan Department of the Attorney General. Issues: cost of service, revenue distribution, policy overview.
43. Expert Report. Case No. 695287. (2022). Before the Nineteenth Judicial District Court, The Parish of East Baton Rouge, State of Louisiana. *Washington-St. Tammany Electric Cooperative, Inc. and Claiborne Electric Cooperative, Inc., Plaintiff v. Louisiana Generating, L.L.C., Defendant*. On Behalf of Louisiana Generating, L.L.C. Issues: environmental regulations, re-fueling, regulatory rules, collateral benefits.
44. Expert Report. Case No. 0:20-cv-60981-AMC. (2022). *Café, Gelato & Panini LLC, d/b/a Café Gelato Panini, on behalf of itself and all others similarly situated, Plaintiff v. Simon Property Group, Inc., Simon Property Group, L.P., M. S. Management Associates, Inc. And The Town Center at Boca Raton Trust, Defendant*. On Behalf of Simon Property Group, Inc.

45. Expert Testimony Case No. U-20836. (2022). *Before the Michigan Public Service Commission. In the Matter of the Application of DTE Electric Company for authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.* On Behalf of the Michigan Department of the Attorney General. Issues: cost of service, revenue distribution, peer comparison.
46. Expert Testimony. D.P.U. 22-22. (2022). *Before the Department of Public Utilities of the Commonwealth of Massachusetts. Petition of NSTAR Electric Company d/b/a Eversource Energy for Approval of a Performance-Based Ratemaking Plan and Increase in Base Distribution Rates for Electric Service Pursuant to G.L. c. 164, §94 and 220 C.M.R. §5.00.* On Behalf of Massachusetts Office of the Attorney General Office of Ratepayer Advocacy. Issues: rate design, TFP analysis, rate increases, benchmark analysis, revenue distribution. Direct and Surrebuttal.
47. Expert Testimony. Docket No. 21-097-U. (2022). *In the Matter of the Application of Black Hills Energy Arkansas, Inc. for Approval of a General Change in Rates and Tariffs.* On Behalf of the Office of Arkansas Attorney General. Issues: cost of service, rate design, reliability, billing determinant adjustment.
48. Expert Testimony. Docket No. 2021-361-G. (2022). *Before the Public Service Commission of South Carolina. In the Matter of: Dominion Energy South Carolina, Inc.'s Request for Approval of New Natural Gas Energy Efficiency Programs.* On Behalf of South Carolina Department of Consumer Affairs. Issues: DSM Rider, energy efficiency, shared savings. Direct and Surrebuttal.
49. Expert Report. Case No. 21-596-ST-AIR. (2022). *Audit of the Application to Increase Rates of Aqua Ohio Wastewater, Inc. For the Period January 1, 2021 through December 31, 2021.* Prepared for Public Utilities Commission of Ohio. Issues: rate design, cost of service, revenue distribution.
50. Expert Report. Case No. 21-595-WW-AIR. (2022). *Audit of the Application to Increase Rates of Aqua Ohio, Inc. For the Period January 1, 2021 through December 31, 2021.* Prepared for Public Utilities Commission of Ohio. Issues: rate design, cost of service, revenue distribution.
51. Expert Testimony. Docket No. 2021.09.112. (2022). *Before the Public Service Commission of the State of Montana. In the Matter of NorthWestern Energy's Annual PCCAM Filing and Application for Approval of Tariff Changes.* On Behalf of the Montana Consumer Counsel. Issues: wholesale energy hedging, market exposure, overview of PCCAM filing, demand side management costs.
52. Expert Affidavit. Docket No. 2:21-cv-1074. (2021). *In the United States District Court for the Western District of Louisiana. The State of Louisiana by and through its Attorney General, Jeff Landry et al. Plaintiffs, v. Joseph R. Biden, Jr., in his official capacity as President of the United States; et al., Defendants.* On Behalf of the Attorney General of Louisiana. Issues: social cost of carbon, carbon tax, environmental policy.
53. Expert Testimony. Case No. U21090. (2021). *Before the Michigan Public Service Commission. In the matter of the application of Consumers Energy Company for approval of its Integrated Resource Plan pursuant to MCL 460.6t, certain accounting approvals, and for other relief.* On Behalf of the Michigan Department of the Attorney General. Issues: IRP, coal plant retirements, acquisition premiums, financial compensation mechanism.
54. Expert Testimony. Docket No 16-036-FR. (2021). *Before the Arkansas Public Service*

- Commission. *In the Matter of the Formula Rate Plan Filings of Entergy Arkansas, Inc., Pursuant to APSC Docket No. 15-015-U*. On Behalf of the Office of Arkansas Attorney General Leslie Rutledge. Issues: netting adjustments, rate increases, projected year adjustments, reliability.
55. Expert Report. Docket JCCP No. 4861. (2021). Before the Superior Court of the State of California County of Los Angeles, Central Civil West. *Coordination Proceeding Special Title [Rule 3.550] Southern California Gas Leak Cases*. On Behalf of Toll Brothers. Issues: gas leak, public service obligation, integrity management.
56. Expert Testimony. Docket No. U-35927. (2021). Before the Louisiana Public Service Commission. *In Re: Application of 1803 Electric Cooperative, Inc. for Approval of Power Purchase Agreements and for Cost Recovery*. Direct and Cross-Answering. On Behalf of Cleco Cajun LLC. Issues: tolling agreements, generation acquisition, risk factors.
57. Expert Testimony. Docket No. 21-060-U. (2021). Before the Arkansas Public Service Commission. *In the Matter of Joint Application of Centerpoint Energy Resources Corp. and Summit Utilities Arkansas, Inc. For all Necessary Authorizations and Approvals for Summit Utilities Arkansas, Inc. To Acquire the Arkansas Assets of Centerpoint Energy Resources Corp. and for Approval of a Certificate of Public Convenience and necessity for Summit Utilities Arkansas, Inc.* Direct and Surrebuttal. On Behalf of the Office of Arkansas Attorney General Leslie Rutledge. Issues: asset acquisition, ratepayer benefits, acquisition synergies, Rider FRP.
58. Expert Affidavit. Civil Action No. 2:21-cv-00778 (2021). Before the United States District Court for the Western District of Louisiana. *The State of Louisiana v. Joseph R. Biden, Jr.* Issues: leasing and drilling moratorium, state revenue, coastal restoration, economic activity.
59. Expert Testimony. Docket No. 21-044-U (2021). Before the Arkansas Public Service Commission. *In the Matter of Centerpoint Energy Resources Corp. D/B/A Centerpoint Energy Arkansas Gas' Request to Extend Rider FRP*. On Behalf of the Office of Arkansas Attorney General Leslie Rutledge. Issues: ratepayer benefits, service quality, cost of service, FRP extension.
60. Expert Testimony. Docket No. 17-010-FR (2021). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Centerpoint Energy Resources Corp. D/B/A Centerpoint Energy Arkansas Gas Pursuant to APSC Docket No. 15-098-U*. On Behalf of the Office of Arkansas Attorney General Leslie Rutledge. Issues: rate increase, investment and expense trends, revenue deficiency, leak performance.
61. Expert Testimony. Case No. U-20963 (2021). Before the Michigan Public Service Commission. *In the Matter of the Application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity and for other relief*. On Behalf of the Michigan Department of the Attorney General. Issues: cost of service, peak allocation, revenue distribution.
62. Expert Testimony. U-20-072, U-20-073, U-20-074. (2021). Before the Regulatory Commission of Alaska. *In the Matter of the Revenue Requirement study and Tariff Filing designated as TA886-2 filed by Alaska Power Company, In the Matter of the Revenue Requirement study and Tariff filing designated as TA6-521 filed by Goat Lake Hydro, Inc., In the Matter of the Revenue Requirement study and Tariff filing designated as TA4-573 filed by BBL Hydro, Inc.* On Behalf of the Alaska Office of Attorney General. Issues: rate groups, cost of service.

63. Expert Testimony. Docket No. P20-001. (2021). Before the Louisiana Pilotage Fee Commission. *In Re: Request for Increase in Approved Pilot Complement; Increased Funding for necessary Additional Manpower; Upward Adjustment of Estimated Average Annual Pilot Compensation; and Related Relief Pursuant to LA R.S. 34:112*. On Behalf of the Louisiana Chemical Association (LCA) and Louisiana Mid-Continent Oil & Gas Association (LMOGA). Issues: unreasonable requests, fee structure, economic impact, over earnings.
64. Expert Testimony. D.P.U. 20-120. (2021). Before the Commonwealth of Massachusetts Before the Department of Public Utilities. *Petition of Boston Gas Company d/b/a National Grid Pursuant to G.L. c. 164, 94 and 220 C.M.R. 5.00 for Approval of an Increase in Base Distribution Rates and Approval of a Performance-Based Ratemaking Plan*. On Behalf of the Massachusetts Office of the Attorney General Office of Ratepayer Advocacy. Issues: rate increase, accelerated depreciation, benchmarking analysis, performance incentive mechanism.
65. Expert Testimony. RPU-2020-0001. (2020). Before the Iowa Utilities Board. *In Re: Iowa-American Water Company*. On Behalf of the Office of Consumer Advocate. Issues: rate increase, test trackers, RSM accounting ratemaking construct.
66. Expert Testimony. BPU Docket Nos. QO19010040 and GO20090622. (2020). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of New Jersey Natural Gas Company for Approval of Energy Efficiency Programs and the Associated Cost Recovery Mechanisms Pursuant to the Clean Energy Act, N.J.S.A. 48:3-87.8 et seq. and 48:3-98.1 et seq.* On behalf of the Division of Rate Counsel. Issues: CBA requirements, capacity benefits, volatility benefits.
67. Expert Testimony. Docket No. 2020-125-E. (2020). Before the Public Service Commission of South Carolina. *In the Matter of: Application of Dominion Energy South Carolina, Incorporated for Adjustments of Rates and Charges (See Commission Order No. 2020-313)*. On Behalf of the South Carolina department of Consumer Affairs. Issues: cost of service, revenue allocation, rate design.
68. Answering Testimony. Before the United States of America Federal Energy Regulatory Commission. Docket No. RP20-614-000 and RP20-618-000. (2020). *Transcontinental Gas Pipe Line Company, LLC*. On Behalf of the North Carolina Utilities Commission. Issues: Tariff revisions, assessment of Transco claims.
69. Expert Testimony. Docket No. 16-036-FR. (2020). *Before the Arkansas Public Service Commission. In the Matter of the Formula Rate Plan Filings of Entergy Arkansas, Inc., Pursuant to APSC Docket No. 15-015-U. Direct and Surrebuttal*. On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: rate increases, investment and expenses trends, load forecast, historic year netting adjustment, reliability issues.
70. Expert Testimony. Docket No. 2019.12.101. (2020). Before the Public Service Commission of the State of Montana. *In the Matter of NorthWestern Energy's Application for Approval of Capacity Resource Acquisition*. On the Behalf of the Montana Consumer Counsel. Issues: sale of capital asset, evaluation benefits, ratepayer cost exposure, reserve fund.
71. Expert Testimony. Formal Case No. 1162. (2020). Before the Public Service Commission of the District of Columbia. *In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges for Gas Service*. On Behalf of the Office of the People's Counsel. Issues: rate increase, revenue adjustment, weather normalization, rate design, revenue distribution.

72. Expert Testimony. Docket No. E-01345A-19-0236. (2020). Before the Arizona Corporation Commission. *In the Matter of the Application of Arizona Public Service Company for Ratemaking Purposes to Fix a Just and Reasonable Rate of Return Thereon, to Approve Rate Schedules Designed to Develop such Return*. Direct and Surrebuttal. On Behalf of the Utilities Division of the Arizona Corporation Commission. Issues: Cost of Service, Revenue Distribution, Rate Design.
73. Expert Testimony. Docket No. 17-010-FR. (2020). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Centerpoint Energy Resources Corp. D/B/A Centerpoint Energy Arkansas Gas Pursuant to APSC Docket No. 15-098-U*. On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: rate increase, leak replacement and reduction, netting adjustment, revenue deficiency, accounting policy changes.
74. Expert Testimony. Case No. U-20697. (2020). Before the Michigan Public Service Commission. *In the Matter of the Application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity and for other relief*. On Behalf of the Michigan Department of Attorney General. Issues: cost of service, revenue distribution, rate design.
75. Expert Testimony. Docket No. 2019.09.058. (2020). Before the Public Service Commission of the State of Montana. *In the Matter of NorthWestern Energy's Annual PCCAM Filing and Application for Approval of Tariff Changes*. On the Behalf of the Montana Consumer Counsel. Issues: purchase power expenses, cost sharing, PCAAM power cost.
76. Expert Testimony. Formal Case No. 1156. (2020). Before the Public Service Commission of the District of Columbia. *In the matter of Potomac Electric Power Company for authority to implement a multiyear rate plan for electric distribution service in the district of Columbia*. Direct, Rebuttal, Surrebuttal, Supplemental, and Second Supplemental. On Behalf of the Office of the People's Counsel. Issues: revenue distribution, rate design, customer charge, performance metric policies, performance metric incentives.
77. Expert Testimony. Case No. U-20561. (2019). Before the Michigan Public Service Commission. *In the matter of the Application of DTE Electric Company for authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority*. On Behalf of the Michigan Department of Attorney General. Issues: Cost of service, allocation of production plant, allocation of sub-transmission plant, revenue distribution.
78. Expert Testimony. Cause No. 45253. (2019). Before the Indiana Utility Regulatory Commission. *Petition of Duke Energy Indiana, LLC Pursuant to Ind. Code 8-1-2-42.7 and 8-1-2-61, for (1) Authority to Modify its Rates and Charges for Electric Utility Service through a Step-In of New Rates and Charges using a Forecasted Test Period; (2) Approval of New Schedules of Rates and Charges, General Rules and Regulations, and Riders; (3) Approval of a Federal Mandate Certificate Under Ind. Code 8-1-8.4-1; (4) Approval of Revised Electric Depreciation Rates Applicable to its Electric Plant in Service; (5) Approval of Necessary and Appropriate Accounting Deferral Relief; and (6) Approval of a Revenue Decoupling Mechanism for Certain Customers Classes*. On Behalf of the Indiana Office of Utility Consumer Counsel. Issues: Decoupling, revenue decoupling mechanism and design, commission policy, benchmarking analysis.
79. Expert Testimony. Docket 19-019-U. (2019). Before the Arkansas Public Service Commission. *In the Matter of the Petition of Entergy Arkansas, LLC for Approval of a Build-Own-Transfer*



- Arrangement for a Renewable Resource and for all other Related Approvals.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: Solar investment, risk assessment, proposed rider.
80. Expert Testimony. Docket No. 16-036-FR. (2019). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Entergy Arkansas, Inc., Pursuant to APSC Docket No. 15-015-U.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: rate design, reliability, and formula rate plan.
  81. Expert Testimony. Docket No. 19-019-U. (2019). Before the Arkansas Public Service Commission. *In the Matter of the Petition of Entergy Arkansas, LLC for Approval of a Build-Own-Transfer Arrangement for a Renewable Resource and for all other Related Approvals.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: Solar project approval, ratepayer risk, cost allocation.
  82. Expert Testimony. Docket No. 17-010-FR. (2019). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Centerpoint Energy Resources Corp. D/B/A Centerpoint Energy Arkansas Gas Pursuant to APSC Docket No. 15-098-U.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: retail rates, leak analysis, revenue deficiency, investments.
  83. Expert Testimony. Case No. U-20471. (2019). Before the Michigan Public Service Commission. *In the matter of the Application of DTE Electric Company for approval of its Integrated Resource Plan pursuant to MCL 460.6t, and for other relief.* On Behalf of the Michigan Department of Attorney General. Issues: load forecasting, least-cost system planning.
  84. Expert Report. Docket No. 18-004422. (2019). Before the State of Florida Division of Administrative Hearings. *Peoples Gas System vs. South Sumter Gas Company, LLC and the City of Leesburg.* On Behalf of the City of Leesburg. Issues: retail rates, customer growth, sales trends and forecasts, policy, cost of service, socio-economic trends and forecasts.
  85. Expert Testimony. Docket Nos. GO18101112 and EO18101113. (2019). Before the New Jersey Board of Public Utilities. *In the Matter of the Public Service Electric and Gas Company for Approval of its Clean Energy Future-Energy Efficiency (“CEF-EE”) Program on a Regulated Basis.* On behalf of the Division of Rate Counsel. Issues: economic impact, cost benefit analysis, decoupling mechanisms.
  86. Expert Testimony. Docket Nos. EO18060629 and GO18060630. (2019). Before the New Jersey Board of Public Utilities. *In the Matter of the Public Service Electric and Gas Company for Approval of the Second Energy Strong Program (Energy Strong II).* On behalf of the Division of Rate Counsel. Issues: economic impact, cost benefit analysis, infrastructure replacement, cost recovery tracker mechanisms.
  87. Expert Report. Docket No. 2011-AD-2. (2019). On Behalf of the Mississippi Public Service Commission. *Order Establishing Docket to Investigate the Development and Implementation of Net Metering Programs and Standards.* On Behalf of the Mississippi Public Utilities Staff. Issues: Net-metering, distributed generation.
  88. Expert Testimony. Docket No. D2018.2.12. (2018). Before the Public Service Commission of the State of Montana. *In the Matter of NorthWestern Energy’s Application for Authority to Increase Retail Electric Utility Service Rates and for Approval of Electric Service Schedules and Rules and Allocated Cost of Service and Rate Design.* On Behalf of the Montana Consumer

- Counsel. Issues: Net-metering, cost of service, revenue distribution, rate design.
89. Expert Testimony. Docket No. 19-SEPE-054-MER. (2018). Before the Kansas Corporation Commission. *In the Matter of the Joint Application of Sunflower Electric Power Corporation and Mid-Kansas Electric Company, Inc. for an Order Approving the Merger of Mid-Kansas Electric Company, Inc. into Sunflower Electric Power Corporation.* On the Behalf of the Kansas Electric Power Cooperative, Inc. Issues: merger impacts, rates, tariffs.
  90. Expert Testimony. Docket No. 18-046-FR. (2018). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Oklahoma Gas and Electric Company Pursuant to APSC Docket No. 16-052-U.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: formula rate plan, plant investment and expenses benchmarking analysis, reliability.
  91. Expert Testimony. Docket No. 16-036-FR. (2018). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Entergy Arkansas, Inc., Pursuant to APSC Docket No. 15-015-U.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: rate design, reliability, and formula rate plan.
  92. Expert Testimony. Docket No. 2017-AD-0112. (2018). Before the Mississippi Public Service Commission. *In Re: Encouraging Stipulation of Matters in Connection with the Kemper County IGCC Project.* On Behalf of the Mississippi Public Utilities Staff. Issues: cost of service and rate design.
  93. Expert Affidavit. Docket No. 87011-E. (2018). Before the 16<sup>th</sup> Judicial District Court Parish of St. Martin State of Louisiana. *Bayou Bridge Pipeline, LLC versus 38.00 Acres, More or Less, Located in St. Martin Parish; Barry Scott Carline, et al.* Issues: economic impacts.
  94. Expert Testimony. Docket No. QO18080843. (2018). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of Nautilus Offshore Wind, LLC for the Approval of the State Waters Wind Project and Authorizing Offshore Wind Renewable Energy Certificates.* On behalf of the Division of Rate Counsel. Issues: regulatory policy and cost-benefit analyses.
  95. Expert Testimony. Docket No. ER18010029 and GR18010030. (2018). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of Public Service Electric and Gas Company for Approval of an Increase in Electric and Gas Rates and for Changes in the Tariffs for Electric and Gas Service, B.P.U.N.J. No. 16 Electric and B.P.U.N.J No. 16 Gas, and for Changes in Depreciation Rates, Pursuant to N.J.S.A. 48:2-18, N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1, and for Other Appropriate Relief.* On behalf of the Division of Rate Counsel. Issues: rate proposal, revenue decoupling, regulatory policy, cost benchmarking.
  96. Expert Testimony. Docket No. T-34695. (2018). Before the Louisiana Public Service Commission. *In re: Application for a rate increase on service originating at Grand isle and termination at St. James for Crude Petroleum as currently outlined in LPSC Tariff No. 75.2.* On Behalf of Energy XXI GOM, LLC. Issues: cost of service, rate design, and alternative regulation.
  97. Expert Testimony. Docket No. 17-071-U. (2018). Before the Arkansas Public Service Commission. *In the Matter of the Application of Black Hills Energy Arkansas, Inc. for Approval of a General Change in Rates and Tariffs.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: cost of service, rate design, billing determinates.
  98. Expert Testimony. Docket No. 17-010-FR. (2018). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filing of CenterPoint Energy Resources*

- Corp. D/B/A CenterPoint Energy Arkansas Gas Pursuant to APSC Docket No. 15-098-U.* On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: cost of service, rate design, alternative regulation, formula rate plan.
99. Expert Testimony. Case No. PU-17-398. (2018). Before the North Dakota Public Service Commission. *In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Utility Service in North Dakota.* On Behalf of the North Dakota Service Commission Advocacy Staff. Issues: cost of service, marginal cost of service, and rate design.
100. Expert Testimony. Docket No. 20170179-GU. (2018). Before the Florida Public Service Commission. *In re: Petition for rate increase and approval of depreciation study by Florida City Gas.* On Behalf of the Citizens of the State of Florida. Issues: policy issues concerning long-term gas capacity procurement.
101. Expert Testimony. Docket No. 18-KCPE-095-MER. (2018). Before the Kansas Corporation Commission. *In the Matter of the Joint Application of Great Plains Energy Incorporated, Kansas City Power & Light Company, and Westar Energy, Inc. for Approval of the Merger of Westar, Inc. and Great Plains Energy Incorporated.* On the Behalf of the Kansas Electric Power Cooperative, Inc. Issues: merger/acquisition policy, financial risk, and ring-fencing.
102. Expert Testimony. Docket No. GR17070776. (2018). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of Public Service Electric and Gas Company for Approval of the Next Phase of the Gas System Modernization Program and Associated Cost Recovery Mechanism (“GSMP II”).* On behalf of the Division of Rate Counsel. Issues: economic impact, infrastructure replacement program rider, pipeline replacement, leak rate comparisons and cost benefit analysis.
103. Expert Affidavit. Case No. 18-489. (2018). Before the Civil District Court for the Parish of Orleans, State of Louisiana. *Bayou Bridge Pipeline, LLC versus The White Castle Lumber and Shingle Company Limited and Jeanerette Lumber & Shingle CO. L.L.C.* Issues: economic impact of crude oil pipeline development.
104. Expert Testimony. Docket No. 16-036-FR. (2017). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Entergy Arkansas, Inc., Pursuant to APSC Docket No. 15-015-U.* On behalf of the Office of the Arkansas Attorney General Leslie Rutledge. Issue: cost of service, rate design, alternative regulation, formula rate plan.
105. Expert Testimony. Docket No. 2017-AD-0112. (2017). Before the Mississippi Public Service Commission. *In re: Encouraging Stipulation of Matters in Connection with the Kemper County IGCC Project.* On Behalf of the Mississippi Public Utilities Staff. Issues: financial analysis, rates and cost trends, economic impacts of proposal.
106. Expert Testimony. Case No. 2017-00179. (2017). Before the Public Service Commission, Commonwealth of Kentucky. *Electronic Application of Kentucky power Company For (1) A General Adjustment of Its Rates for Electric Service; (2) An Order Approving Its 2017 Environmental Compliance Plan; (3) An Order Approving Its Tariffs and Riders; (4) An Order Approving Accounting Practices to Establish a Regulatory Asset or Liability Related to the Big Sandy I Operation Rider; and (5) An Order Granting All Other Required Approvals and Relief.* On Behalf of the Office of the Kentucky Attorney General. Issues: rate design, revenue allocation, economic development.

107. Expert Testimony. Docket No. 17-010-FR. (2017). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filing of CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Arkansas Gas Pursuant to APSC Docket No. 15-098-U*. On Behalf of the Arkansas Attorney General Leslie Rutledge. Issues: cost of service, rate design, alternative regulation, formula rate plan.
108. Expert Testimony. Formal Case No. 1142. (2017). Before the Public Service Commission of the District of Columbia. *In the Matter of the Merger of AltaGas Ltd. and WGL Holdings, Inc.* On Behalf of the Office of the People’s Counsel. Issues: merger/acquisition policy, financial risk, ring-fencing, and reliability.
109. Expert Testimony. D.P.U. 17-05. (2017). Before the Massachusetts Department of Public Utilities. *Petition of NSTAR Electric Company and Western Massachusetts Electric Company each d/b/a Eversource Energy for Approval of an Increase in Base Distribution Rates for Electric Service Pursuant to G.L. c. 164, § 94 and 220 C.M.R. § 5.00*. On Behalf of the Massachusetts Office of the Attorney General Office of Ratepayer Advocacy. Issues: performance-based ratemaking, multi-factor productivity estimation.
110. Deposition and Testimony. (2017) Before the Nebraska Section 70, Article 13 Arbitration Panel. *Northeast Nebraska Public Power District, City of South Sioux City Nebraska; City of Wayne, Nebraska; City of Valentine, Nebraska; City of Beatrice, Nebraska; City of Scribner, Nebraska; Village of Walthill, Nebraska, vs. Nebraska Public Power District*. On the Behalf of Baird Holm LLP for the Plaintiffs. Issues: rate discounts; cost of service; utility regulation, economic harm.
111. Expert Testimony. Docket No. 16-052-U. (2017). Before the Arkansas Public Service Commission. *In the Matter of the Application of the Oklahoma Gas and Electric Company for Approval of a General Change in Rates, Charges and Tariffs*. On the Behalf of the Office of Arkansas Attorney General Leslie Rutledge. Issues: cost of service, rate design, alternative regulation, formula rate plan.
112. Expert Testimony. Docket No. 16-KCPE-593-ACQ. (2016). Before the Kansas Corporation Commission. *In the Matter of the Joint Application of Great Plains Energy Incorporated, Kansas City Power & Light Company, and Westar Energy, Inc. for Approval of the Acquisition of Westar, Inc. by Great Plains Energy Incorporated*. On the Behalf of the Kansas Electric Power Cooperative, Inc. Issues: merger/acquisition policy, financial risk, and ring-fencing.
113. Expert Testimony. Formal Case No. 1139. (2016). Before the Public Service Commission of the District of Columbia. *In the Matter of the Application of Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service*. On the Behalf of the Office of the People’s Counsel for the District of Columbia. Issues: cost of service, rate design, alternative regulation.
114. Expert Affidavit. Docket No. CP15-558-000 (2016). Before the United States of America Federal Energy Regulatory Commission. *PennEast Pipeline Company, LLC*. Affidavit and Reply Affidavit. On the Behalf of the New Jersey Division of Rate Counsel. Issues: pipeline capacity, peak day requirements.
115. Expert Testimony. Docket No. RPU-2016-0002. (2016). Before the Iowa Utilities Board. *In re: Iowa American Water Company application for revision of rates*. On behalf of the Office of Consumer Advocate. Issue: revenue stabilization mechanism, revenue decoupling.

116. Expert Testimony. Docket No. 15-015-U. (2016). Before the Arkansas Public Service Commission. *In the Matter of the Formula Rate Plan Filings of Entergy Arkansas, Inc., Pursuant to APSC Docket No. 15-015-U*. On behalf of the Office of the Arkansas Attorney General Leslie Rutledge. Issue: formula rate plan evaluation.
117. Expert Testimony. Docket Nos. 160021-EI, 160061-EI, 160062-EI, and 160088-EI. (2016). Before the Florida Public Service Commission. *In re: Petition for rate increase by Florida Power & Light Company (consolidated)*. On behalf of the Citizens of the State of Florida. Issue: load forecasting.
118. Expert Testimony. Docket Nos. 160021-EI, 160061-EI, 160062-EI, and 160088-EI. (2016). Before the Florida Public Service Commission. *In re: Petition for rate increase by Florida Power & Light Company (consolidated)*. On behalf of the Citizens of the State of Florida. Issue: off-system sales incentives.
119. Expert Testimony. Project No. 5-103. (2016). United States of America Federal Energy Regulatory Commission. *Confederated Salish and Kootenai Tribes Energy Keepers, Incorporated*. On behalf of the Flathead, Mission, and Jocko Valley Irrigation Districts and the Flathead Joint Board of Control of the Flathead, Mission, and Jocko Valley Irrigation Districts.
120. Expert Testimony. Docket No. 15-098-U. (2016). Before the Arkansas Public Service Commission. *In the Matter of the Application of CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas for a General Change or Modification in its Rates, Charges and Tariffs*. On behalf of the Office of the Arkansas Attorney General. Issues: formula rate plan, cost of service and rate design.
121. Expert Testimony. BPU Docket No. GM15101196. (2016). *In the Matter of the Merger of Southern Company and AGL Resources, Inc.* On behalf of the New Jersey Division of Rate Counsel. Issues: merger standards of review, customer dividend contributions, synergy savings and costs to achieve, ratemaking treatment of merger-related costs.
122. Expert Testimony. Docket No. 15-078-U. (2015). Before the Arkansas Public Service Commission. *In the Matter of the Joint Application of SourceGas Inc., SourceGas LLC, SourceGas Holdings LLC and Black Hills Utility Holdings, Inc. for all Necessary Authorizations and Approvals for Black Hills Utility Holdings, Inc. to Acquire SourceGas Holdings LLC*. On behalf of the Office of the Arkansas Attorney General. Issues: public policy and regulatory policy associated with the acquisition.
123. Expert Testimony. Docket No. 15-031-U. (2015). Before the Arkansas Public Service Commission. *In the Matter of the Application of SourceGas Arkansas Inc. for an Order Approving the Acquisition of Certain Storage Facilities and the Recovery of Investments and Expenses Associated Therewith*. On behalf of the Office of the Arkansas Attorney General. Issues: cost-benefit analysis, transmission cost analysis, and a due diligence analysis.
124. Expert Testimony. Docket No. 15-015-U. (2015). Before the Arkansas Public Service Commission. *In the Matter of the Application of Entergy Arkansas, Inc. for Approval of Changes in Rates for Retail Electric Service*. On behalf of the Office of the Arkansas Attorney General. Issues: economic development riders and production plant cost allocation.
125. Expert Testimony. Docket No. 7970. (2015). Before the Vermont Public Service Board. *Petition of Vermont Gas Systems, Inc., for a certificate of public good pursuant to 30 V.S.A. § 248, authorizing the construction of the "Addison Natural Gas Project" consisting of*

- approximately 43 miles of new natural gas transmission pipeline in Chittenden and Addison Counties, approximately 5 miles of new distribution mainlines in Addison County, together with three new gate stations in Williston, New Haven, and Middlebury, Vermont. On behalf of AARP-Vermont. Issues: net economic benefits of proposed natural gas transmission project.*
126. Expert Testimony. File No. ER-2014-0370 (2015). Before the Public Service Commission of the State of Missouri. *In the Matter of Kansas City Power & Light Company for Authority Implement A General Rate Increase for Electric Service.* On behalf of the Missouri Office of the People's Counsel. Issues: customer charges, rate design, revenue distribution, class cost of service, and policy and ratemaking considerations in connection with electric vehicle charging stations.
  127. Expert Testimony. File No. ER-2014-0351 (2015). Before the Public Service Commission of the State of Missouri. *In the Matter of The Empire District Electric Company for Authority To File Tariffs Increasing Rates for Electric Service Provided to Customers In the Company's Missouri Service Area.* On behalf of the Missouri Office of the People's Counsel. Issues: customer charges, rate design, revenue distribution, and class cost of service.
  128. Expert Testimony. D.P.U. 14-130 (2015). Before the Massachusetts Department of Public Utilities. *Petition of Fitchburg Gas and Electric Light Company d/b/a Unitil for approval by the Department of Public Utilities of the Company's 2015 Gas System Enhancement Program Plan, pursuant to G.L. c. 164, § 145, and for rates effective May 1, 2015.* On behalf of the Attorney General's Office. Issues: ratepayer protections, cost allocations, rate design, performance metrics.
  129. Expert Testimony. D.P.U. 14-131 (2015). Before the Massachusetts Department of Public Utilities. *Petition of The Berkshire Gas Company for approval by the Department of Public Utilities of the Company's Gas System Enhancement Program Plan for 2015, pursuant to G.L. c. 164, § 145, and for rates effective May 1, 2015.* On behalf of the Attorney General's Office. Issues: ratepayer protections, cost allocations, rate design, performance metrics.
  130. Expert Testimony. D.P.U. 14-132 (2015). Before the Massachusetts Department of Public Utilities. *Petition of Boston Gas Company and Colonial Gas Company d/b/a National Grid for approval by the Department of Public Utilities of the Companies' Gas System Enhancement Program for 2015, pursuant to G.L. c. 164, § 145, and for rates effective May 1, 2015.* On behalf of the Attorney General's Office. Issues: ratepayer protections, cost allocations, rate design, performance metrics.
  131. Expert Testimony. D.P.U. 14-133 (2015). Before the Massachusetts Department of Public Utilities. *Petition of Liberty Utilities for approval by the Department of Public Utilities of the Company's Gas System Enhancement Program Plan for 2015, pursuant to G.L. c. 164, § 145, and for rates effective May 1, 2015.* On behalf of the Attorney General's Office. Issues: ratepayer protections, cost allocations, rate design, performance metrics.
  132. Expert Testimony. D.P.U. 14-134 (2015). Before the Massachusetts Department of Public Utilities. *Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for approval by the Department of Public Utilities of the Company's Gas System Enhancement Program Plan for 2015, pursuant to G.L. c. 164, § 145, and for rates to be effective May 1, 2015.* On behalf of the Attorney General's Office. Issues: ratepayer protections, cost allocations, rate design, performance metrics.
  133. Expert Testimony. D.P.U. 14-135 (2015). Before the Massachusetts Department of Public Utilities. *Petition of NSTAR Gas Company for approval by the Department of Public Utilities*

- of the Company's Gas System Enhancement Program Plan for 2015, pursuant to G.L. c. 164, § 145, and for rates to be effective May 1, 2015. On behalf of the Attorney General's Office. Issues: ratepayer protections, cost allocations, rate design, performance metrics.*
134. Expert Report. Docket No. X-33192 (2015). Before the Louisiana Public Service Commission. *Examination of the Comprehensive Costs and Benefits of Net Metering in Louisiana.* On behalf of the Louisiana Public Service Commission. Issues: cost-benefit, cost of service, rate impact.
  135. Expert Testimony. F.C. 1119 (2014). Before the District of Columbia Public Service Commission. *In the Matter of the Merger of Exelon Corporation, Pepco Holdings, Inc., Potomac Electric Power Company, Exelon Energy Delivery Company, LLC, and new Special Purpose Entity, LLC.* On behalf of the Office of the People's Counsel. Issues: economic impact analysis, reliability, consumer investment fund, regulatory oversight, impacts to competitive electricity markets.
  136. Expert Report. Civil Action 1:08-cv-0046 (2014). Before the U.S. District Court for the Southern District of Ohio. *Anthony Williams, et al., v. Duke Energy International, Inc., et al.* On behalf of Markovits, Stock & DeMarco, Attorneys & Counselors at Law. Issues: public utility regulation, electric power markets, economic harm.
  137. Expert Testimony. D.P.U. 14-64 (2014). Before the Massachusetts Department of Public Utilities. *NSTAR Gas Company/HOPCO Gas Services Agreement. On behalf of the Office of the Public Advocate.* Issues: certain ratemaking features associated with the proposed Gas Service Agreement.
  138. Expert Testimony. Docket Nos. 14-0224 and 14-0225 (2014). Before the Illinois Commerce Commission. *In the Matter of the Peoples Gas Light and Coke Company and North Shore Gas Company Proposed General Increase in Rates for Gas Service (consolidated).* On behalf of the People of the State of Illinois. Issues: test year expenses, cost benchmarking analysis, pipeline replacement, and leak rate comparisons.
  139. Expert Testimony. Docket 8191 (2014). Before the Vermont Public Service Board. *In Re: Petition of Green Mountain Power Corporation for Approval of a Successor Alternative Regulation Plan.* On the behalf of AARP-Vermont. Issues: Alternative Regulation.
  140. Expert Testimony. Docket No. 2013-00168 (2014). Before the Maine Public Utilities Commission. *In the Matter of the Request for Approval of an Alternative Rate Plan (ARP 2014) Pertaining to Central Maine Power Company.* On behalf of the Office of the Public Advocate. Issues: class cost of service study, marginal cost of service study, revenue distribution and rate design.
  141. Expert Testimony. D.P.U. 13-90 (2013). Before the Massachusetts Department of Public Utilities. *Petition of Fitchburg Gas and Electric Light Company (Electric Division) d/b/a Unitil to the Department of Public Utilities for approval of the rates and charges and increase in base distribution rates for electric service.* On behalf of the Office of the Ratepayer Advocate. Issues: capital cost adjustment mechanism and performance-based regulation.
  142. Expert Testimony. BPU Docket Nos. EO13020155 and GO13020156. (2013). Before the State of New Jersey Board of Public Utilities. *I/M/O The Petition of Public Service Electric & Gas Company for the Approval of the Energy Strong Program.* On behalf of the Division of Rate Counsel. Issues: economic impact, infrastructure replacement program rider, pipeline replacement, leak rate comparisons and cost benefit analysis.

143. Expert Testimony. D.P.U. 13-75 (2013). Before the Massachusetts Department of Public Utilities. *Investigation by the Department of Public Utilities on its Own Motion as to the Propriety of the Rates and Charges by Bay State Gas Company d/b/a Columbia Gas of Massachusetts set forth in Tariffs M.D.P.U. Nos. 140 through 173, and Approval of an Increase in Base Distribution Rates for Gas Service Pursuant to G.L. c. 164, § 94 and 220 C.M.R. § 5.00 et seq., filed with the Department on April 16, 2013, to be effective May 1, 2013.* On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. Issues: Target infrastructure replacement program rider, pipeline replacement, and leak rate comparisons; environmental benefits analysis; O&M offset; and cost benchmarking analysis.
144. Expert Testimony. Docket No. 13-115 (2013). Before the Delaware Public Service Commission. *In the Matter of the Application of Delmarva Power & Light Company FOR an Increase in Electric Base Rates and Miscellaneous Tariff Changes* (Filed March 22, 2013). On the Behalf of Division of the Public Advocate. Issues: pro forma infrastructure proposal, class cost of service study, revenue distribution, and rate design.
145. Expert Testimony. Formal Case No. 1103 (2013). Before the Public Service Commission of the District of Columbia. *In the Matter of the Application of the Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service.* On the Behalf of the Office of the People’s Counsel of the District of Columbia. Issues: Pro forma adjustment for reliability investments.
146. Expert Testimony. Case No. 9326 (2013). Before the Public Service Commission of Maryland. *In the Matter of the Application of Baltimore Gas and Electric Company for Adjustments to its Electric and Gas Base Rates.* On the Behalf of the Maryland Office of the People’s Counsel. Issues: Electric Reliability Investment (“ERI”) initiatives, pro forma gas infrastructure proposal, tracker mechanisms, class cost of service study, revenue distribution, and rate design
147. Rulemaking Testimony. (2013). Before the Louisiana Tax Commission. Examination of Louisiana Assessors’ Association Well Diameter Analysis, economic development policies regarding midstream assets and industrial development.
148. Expert Testimony. Case No. 9317 (2013). Before the Public Service Commission of Maryland. *In the Matter of the Application of Delmarva Power & Light Company for Adjustments to its Retail Rates for the Distribution of Electric Energy.* Direct, and Surrebuttal. On the Behalf of the Maryland Office of the People’s Counsel. Issues: Grid Resiliency Charge, tracker mechanisms, pipeline replacement, class cost of service study, revenue distribution, and rate design.
149. Expert Testimony. Case No. 9311 (2013). Before the Public Service Commission of Maryland. *In the Matter of the Application of Potomac Electric Power Company for an Increase in its Retail Rates for the Distribution of Electric Energy.* Direct, and Surrebuttal. On the Behalf of the Maryland Office of the People’s Counsel. Issues: Grid Resiliency Charge, tracker mechanisms, pipeline replacement, class cost of service study, revenue distribution, and rate design.
150. Expert Testimony. Docket No. 12AL-1268G (2013). Before the Public Utilities Commission of the State of Colorado. *In the Matter of the Tariff Sheets Filed by Public Service Company of Colorado with Advice No. 830 – Gas. Answer.* On the Behalf of the Colorado Office of Consumer Counsel. Issues: Pipeline System Integrity Adjustment, tracker mechanisms, pipeline replacement and leak rate comparisons.



151. Expert Testimony. BPU Docket No. EO12080721 (2013). Before the New Jersey Board of Public Utilities. *In the Matter of the Public Service Electric & Gas Company for Approval of an Extension of Solar Generation Program*. On the Behalf of the New Jersey Division of Rate Counsel. Direct, Rebuttal, Surrebuttal. Issues: solar energy market design, solar energy market conditions, solar energy program design and net economic benefits.
152. Expert Testimony. BPU Docket No. EO12080726 (2013). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of Public Service Electric & Gas Company for Approval of a Solar Loan III Program*. On the Behalf of the New Jersey Division of Rate Counsel. Direct, Rebuttal and Surrebuttal. Issues: solar energy market design, solar energy market conditions, solar energy program design.
153. Expert Testimony. BPU Docket No. EO11050314V. (2012). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of Fishermen's Atlantic City Windfarm, LLC for the Approval of the State Waters Project and Authorizing Offshore Wind Renewable Energy Certificates*. On the Behalf of the New Jersey Division of Rate Counsel. December 17, 2012. Issues: approval of offshore wind project and ratepayer financial support for the proposed project.
154. Expert Testimony. D.P.U. 12-25. (2012). Before the Massachusetts Department of Public Utilities. *In the Matter of Bay State Gas Company d/b/a/ Columbia Gas Company of Massachusetts Request for Increase in Rates*. On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. Issues: Target infrastructure replacement program rider, pipeline replacement and leak rate comparisons.
155. Expert Testimony. Docket Nos. UE-120436, et.al. (consolidated). (2012). Before the Washington Utilities and Transportation Commission. *Washington Utilities and Transportation Commission v. Avista Corporation D/B/A Avista Utilities*. On the Behalf of the Washington Attorney General, Office of the Public Counsel. Issues: Revenue Decoupling, lost revenues, tracker mechanisms, attrition adjustments.
156. Expert Testimony. Case No. 9286. (2012) Before the Public Service Commission of Maryland. *In Re: Potomac Electric Power Company ("Pepco") General Rate Case*. On the Behalf of the Maryland Office of the People's Counsel. Issues: Capital tracker mechanisms/reliability investment mechanisms, reliability issues, regulatory lag, class cost of service, revenue distribution, rate design.
157. Expert Testimony. Case No 9285. (2012) Before the Public Service Commission of Maryland. *In Re: the Delmarva Power and Light Company General Rate Case*. On the Behalf of the Maryland Office of the People's Counsel. Issues: Capital tracker mechanisms/reliability investment mechanisms, reliability issues, regulatory lag, class cost of service, revenue distribution, rate design.
158. Expert Testimony. Docket Nos. UE-110876 and UG-110877 (consolidated). (2012). Before the Washington Utilities and Transportation Commission. *Washington Utilities and Transportation Commission v. Avista Corporation D/B/A Avista Utilities*. On the Behalf of the Washington Attorney General, Office of the Public Counsel. Issues: Revenue Decoupling, lost revenues, tracker mechanisms.
159. Expert Testimony. BPU Docket No. EO11050314V. (2012). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of Fishermen's Atlantic City Windfarm, LLC for the Approval of the State Waters Project and Authorizing Offshore Wind Renewable Energy Certificates*. On the Behalf of the New Jersey Division of Rate Counsel. February 3, 2012.

- Issues: approval of offshore wind project and ratepayer financial support for the proposed project.
160. Expert Testimony. Docket No. NG 0067. (2012). Before the Public Service Commission of Nebraska. *In the Matter of the Application of SourceGas Distribution, LLC Approval of a General Rate Increase*. On the Behalf of the Public Advocate. January 31, 2012. Issues: Revenue Decoupling, Customer Adjustments, Weather Normalization Adjustments, Class Cost of Service Study, Rate Design.
  161. Expert Testimony. Docket No. G-04204A-11-0158. (2011). Before the Arizona Corporation Commission. On the Behalf of the Arizona Corporation Commission Staff. *In the Matter of the Application of UNS Gas, Inc. for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of Its Arizona Properties*. Issues: Revenue Decoupling; Class Cost of Service Modeling; Revenue Distribution; Rate Design.
  162. Expert Testimony. Formal Case Number 1087. (2011). Before the Public Service Commission of the District of Columbia. On the Behalf of the Office of the People's Counsel of the District of Columbia. *In the Matter of the Application of Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service*. Issues: Regulatory lag, ratemaking principles, reliability-related capital expenditure tracker proposals.
  163. Expert Affidavit. Case No. 11-1364. (2011). *The State of Louisiana, the Louisiana Department of Environmental Quality, and the Louisiana Public Service Commission v. United States Environmental Protection Agency and Lisa P. Jackson*. Before the United States Court of Appeals for the District of Columbia Circuit. On the behalf of the State of Louisiana, the Louisiana Department of Environmental Quality, and the Louisiana Public Service Commission. Issues: Impacts of environmental costs on electric utilities, compliance requirements, investment cost of mitigation equipment, multi-area dispatch modeling and plant retirements.
  164. Expert Affidavit. Docket No. EPA-HQ-OAR-2009-0491. (2011). Before the U.S. Environmental Protection Agency. *Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals*. On the Behalf of the Louisiana Public Service Commission. Issues: Impacts of environmental costs on electric utilities, compliance requirements, investment cost of mitigation equipment, multi-area dispatch modeling and plant retirements.
  165. Expert Testimony. Case No. 9296. (2011). Before the Maryland Public Service Commission. *On the Behalf of the Maryland Office of People's Counsel. In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges and Revise its Terms and Conditions for Gas Service*. Issues: Infrastructure Cost Recovery Rider; Class Cost of Service Modeling; Revenue Distribution; Rate Design.
  166. Expert Testimony. Docket No. G-01551A-10-0458. (2011). Before the Arizona Corporation Commission. On the Behalf of the Arizona Corporation Commission Staff. *In the Matter of the Application of Southwest Gas Corporation for the Establishment of Just and Reasonable Rates and Charges Designed to Realize A Reasonable Rate of Return on the Fair Value of its Properties throughout Arizona*. Issues: Revenue Decoupling; Class Cost of Service Modeling; Revenue Distribution; Rate Design.
  167. Expert Testimony. Docket No. 11-0280 and 11-0281. (2011). Before the Illinois Commerce

- Commission. On the Behalf of the Illinois Attorney General, the Citizens Utility Board, and the City of Chicago, Illinois. *In re: Peoples Gas Light and Coke Company and North Shore Natural Gas Company*. Issues: Revenue Decoupling and Rate Design. (Direct and Rebuttal)
168. Expert Testimony. D.P.U. 11-01. (2011). Before the Massachusetts Department of Public Utilities. On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. *Petition of the Fitchburg Electric and Gas Company (Electric Division) for Approval of A General Increase in Electric Distribution Rates and Approval of a Revenue Decoupling Mechanism*. Issues: Capital Cost Rider, Revenue Decoupling.
169. Expert Testimony. D.P.U. 11-02. (2011). Before the Massachusetts Department of Public Utilities. On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. *Petition of the Fitchburg Electric and Gas Company (Gas Division) for Approval of A General Increase in Electric Distribution Rates and Approval of a Revenue Decoupling Mechanism*. Issues: Pipeline Replacement Rider, Revenue Decoupling.
170. Expert Affidavit. Docket No. EL-11-13 (2011). Before the Federal Energy Regulatory Commission. Petition for Preliminary Ruling, Atlantic Grid Operations. On the Behalf of the New Jersey Division of Rate Counsel. Issues: Offshore wind generation development, offshore wind transmission development, ratemaking treatment of development costs, transmission development incentives.
171. Expert Opinion. Case No. CI06-195. (2011). Before the District Court of Jefferson County, Nebraska. On the Behalf of the City of Fairbury, Nebraska and Michael Beachler. *In re: Endicott Clay Products Co. vs. City of Fairbury, Nebraska and Michael Beachler*. Issues: rate design and ratemaking, time of use and time differentiated rate structures, empirical analysis of demand and usage trends for tariff eligibility requirements.
172. Expert Testimony. D.P.U. 10-114. (2010). Before the Massachusetts Department of Public Utilities. On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. *Petition of the New England Gas Company for Approval of A General Increase in Electric Distribution Rates and Approval of a Revenue Decoupling Mechanism*. Issues: infrastructure replacement rider.
173. Expert Testimony. D.P.U. 10-70. (2010). Before the Massachusetts Department of Public Utilities. *Petition of the Western Massachusetts Electric Company for Approval of A General Increase in Electric Distribution Rates and Approval of a Revenue Decoupling Mechanism*. On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. Issues: Revenue decoupling; infrastructure replacement rider; performance-based regulation; inflation adjustment mechanisms; and rate design.
174. Expert Testimony. G.U.D. Nos. 998 & 9992. (2010). Before the Texas Railroad Commission. *In the Matter of the Rate Case Petition of Texas Gas Services, Inc.* On the Behalf of the City of El Paso, Texas. Issues: Cost of service, revenue distribution, rate design, and weather normalization.
175. Expert Testimony. B.P.U Docket No. GR10030225. (2010). Before the New Jersey Board of Public Utilities. *In the Matter of the Petition of New Jersey Natural Gas Company for Approval of Regional Greenhouse Gas Initiative Programs and Associated Cost Recovery Mechanisms Pursuant to N.J.S.A. 48:3-98.1*. On the Behalf of the Department of the Public Advocate, Division of Rate Counsel. Issues: solar energy proposals, solar securitization issues, solar energy policy issues.

176. Expert Testimony. D.P.U. 10-55. (2010). Before the Massachusetts Department of Public Utilities. Investigation Into the Propriety of Proposed Tariff Changes for Boston Gas Company, Essex Gas Company, and Colonial Gas Company. (d./b./a. National Grid). On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. Issues: Revenue decoupling; pipeline-replacement rider; performance-based regulation; partial productivity factor estimates, inflation adjustment mechanisms; and rate design.
177. Expert Testimony. Cause No.43839. (2010). Before the Indiana Utility Regulatory Commission. In the Matter of Southern Indiana Gas and Electric Company d/b/a/ Vectren Energy Delivery of Indiana, Inc. (Vectren South-Electric). On the behalf of the Indiana Office of Utility Consumer Counselor (OUCC). Issues: revenue decoupling, variable production cost riders, gains on off-system sales, transmission cost riders.
178. Congressional Testimony. Before the United States Congress. (2010). U.S. House of Representatives, Committee on Natural Resources. Hearing on the Consolidated Land, Energy, and Aquatic Resources Act. June 30, 2010.
179. Expert Testimony. Before the City Council of El Paso, Texas; Public Utility Regulatory Board. (2010). On the Behalf of the City of El Paso. In Re: Rate Application of Texas Gas Services, Inc. Issues: class cost of service study (minimum system and zero intercept analysis), rate design proposals, weather normalization adjustment, and its cost of service adjustment clause, conservation adjustment clause proposals, and other cost tracker policy issues.
180. Expert Testimony. Docket 09-00183. (2010). Before the Tennessee Regulatory Authority. In the Matter of the Petition of Chattanooga Gas Company for a General Rate Increase, Implementation of the EnergySMART Conservation Programs, and Implementation of a Revenue Decoupling Mechanism. On the Behalf of Tennessee Attorney General, Consumer Advocate & Protection Division. Issues: revenue decoupling and energy efficiency program review and cost effectiveness analysis.
181. Expert Testimony and Exhibits. Docket No. 10-240. (2010). Before the Louisiana Office of Conservation. In Re: Cadeville Gas Storage, LLC. On the Behalf of Cardinal Gas Storage, LLC. Issues: alternative uses and relative economic benefits of conversion of depleted hydrocarbon reservoir for natural gas storage purposes.
182. Expert Testimony. Docket No. 09505-EI. (2010). Before the Florida Public Service Commission. In Re: Review of Replacement Fuel Costs Associated with the February 26, 2008 outage on Florida Power & Light's Electrical System. On the Behalf of the Florida Office of Public Counsel for the Citizens of the State of Florida. Issues: Replacement costs for power outage, regulatory policy/generation development incentives, renewable and energy efficiency incentives.
183. Expert Report, Recommendation, and Proposed Rule: Docket Number R-29380-A, ex parte, (2009). Before the Louisiana Public Service Commission. In re: Environmental Adjustment Clause and Environmental Certification for Electric Power Generation Resources. On the behalf of the Louisiana Public Service Commission Staff. Report and Recommendation. Issues: environmental regulation and cost recovery; allowance allocations and air credit markets cost recovery treatment; other generation planning issues.
184. Expert Testimony. Docket 09-00104. (2009). Before the Tennessee Regulatory Authority. In the Matter of the Petition of Piedmont Natural Gas Company, Inc. to Implement a Margin Decoupling Tracker Rider and Related Energy Efficiency and Conservation Programs. On the Behalf of the Tennessee Attorney General, Consumer Advocate & Protection Division. Issues:

- revenue decoupling, energy efficiency program review, weather normalization.
185. Expert Testimony. Docket Number NG-0060. (2009). Before the Nebraska Public Service Commission. In the Matter of SourceGas Distribution, LLC Approval for a General Rate Increase. On the Behalf of the Nebraska Public Advocate. October 29, 2009. Issues: revenue decoupling, inflation trackers, infrastructure replacement riders, customer adjustment rider, weather normalization rider, weather normalization adjustments, estimation of normal weather for ratemaking purposes.
  186. Expert Report and Deposition. Before the 23<sup>rd</sup> Judicial District Court, Parish of Assumption, State of Louisiana. On the Behalf of Dow Hydrocarbons and Resources, Inc. September 1, 2009. (Deposition, November 23-24, 2009). Issues: replacement and repair costs for underground salt cavern hydrocarbon storage.
  187. Expert Testimony. D.P.U. 09-39. Before the Massachusetts Department of Public Utilities. (2009). Investigation Into the Propriety of Proposed Tariff Changes for Massachusetts Electric Company and Nantucket Electric Company (d./b./a. National Grid). On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. Issues: Revenue decoupling; infrastructure rider; performance-based regulation; inflation adjustment mechanisms; revenue distribution; and rate design.
  188. Expert Testimony. D.P.U. 09-30. Before the Massachusetts Department of Public Utilities. (2009). In the Matter of Bay State Gas Company Request for Increase in Rates. On the Behalf of the Office of the Attorney General, Office of Ratepayer Advocacy. Issues: Revenue decoupling; target infrastructure replacement program rider; revenue distribution; and rate design.
  189. Expert Testimony. Docket EO09030249. (2009). Before the New Jersey Board of Public Utilities. In the Matter of the Petition of Public Service Electric and Gas Company for Approval of a Solar Loan II Program and An Associated Cost Recovery Mechanism. On the Behalf of the Department of the Public Advocate, Division of Rate Counsel. Issues: solar energy market design, renewable portfolio standards, solar energy, and renewable financing/loan program design.
  190. Expert Testimony. Docket EO0920097. (2009). Before the New Jersey Board of Public Utilities. In the Matter of the Verified Petition of Rockland Electric Company for Approval of an SREC-Based Financing Program and An Associated Cost Recovery Mechanism. On the Behalf of the Department of the Public Advocate, Division of Rate Counsel. Issues: solar energy market design; renewable energy portfolio standards; solar energy.
  191. Expert Rebuttal Report. Civil Action No.: 2:07-CV-2165. (2009). Before the U.S. District Court, Western Division of Louisiana, Lake Charles Division. Prepared on the Behalf of the Transcontinental Pipeline Corporation. Issues: expropriation and industrial use of property.
  192. Expert Testimony. Docket EO06100744. (2008). Before the New Jersey Board of Public Utilities. In the Matter of the Renewable Portfolio Standard – Amendments to the Minimum filing Requirements for Energy Efficiency, Renewable Energy, and Conservation Programs and For Electric Distribution Company Submittals of Filings in connection with Solar Financing (Atlantic City Electric Company). On the Behalf of the Department of the Public Advocate, Division of Rate Counsel. Issues: Solar energy market design; renewable energy portfolio standards; solar energy. (Rebuttal and Surrebuttal)
  193. Expert Testimony. Docket EO08090840. (2008). Before the New Jersey Board of Public

- Utilities. In the Matter of the Renewable Portfolio Standard – Amendments to the Minimum filing Requirements for Energy Efficiency, Renewable Energy, and Conservation Programs and For Electric Distribution Company Submittals of Filings in connection with Solar Financing (Jersey Central Power & Light Company). On the Behalf of the Department of the Public Advocate, Division of Rate Counsel. Issues: Solar energy market design; renewable energy portfolio standards; solar energy. (Rebuttal and Surrebuttal)
194. Expert Testimony. Docket UG-080546. (2008). Before the Washington Utilities and Transportation Commission. On the Behalf of the Washington Attorney General (Public Counsel Section). Issues: Rate Design, Cost of Service, Revenue Decoupling, Weather Normalization.
  195. Congressional Testimony. (2008). Senate Republican Conference: Panel on Offshore Drilling in the Restricted Areas of the Outer Continental Shelf. September 18, 2008.
  196. Expert Testimony. Appeal Number 2007-125 and 2007-299. (2008). Before the Louisiana Tax Commission. On the Behalf of Jefferson Island Storage and Hub, LLC (AGL Resources). Issues: Valuation Methodologies, Underground Storage Valuation, LTC Guidelines and Policies, Public Purpose of Natural Gas Storage. July 15, 2008 and August 20, 2008.
  197. Expert Testimony. Docket Number 07-057-13. (2008). Before the Utah Public Service Commission. In the Matter of the Application of Questar Gas Company to File a General Rate Case. On the Behalf of the Utah Committee of Consumer Services. Issues: Cost of Service, Rate Design. August 18, 2008 (Direct, Rebuttal, Surrebuttal).
  198. Rulemaking Testimony. (2008). Before the Louisiana Tax Commission. Examination of Replacement Cost Tables, Depreciation and Useful Lives for Oil and Gas Properties. Chapter 9 (Oil and Gas Properties) Section. August 5, 2008.
  199. Legislative Testimony. (2008). Examination of Proposal to Change Offshore Natural Gas Severance Taxes (HB 326 and Amendments). Joint Finance and Appropriations Committee of the Alabama Legislature. March 13, 2008.
  200. Public Testimony. (2007). Issues in Environmental Regulation. Testimony before Gubernatorial Transition Committee on Environmental Regulation (Governor-Elect Bobby Jindal). December 17, 2007.
  201. Public Testimony. (2007). Trends and Issues in Alternative Energy: Opportunities for Louisiana. Testimony before Gubernatorial Transition Committee on Natural Resources (Governor-Elect Bobby Jindal). December 13, 2007.
  202. Expert Report and Recommendation: Docket Number S-30336 (2007). Before the Louisiana Public Service Commission. In re: Entergy Gulf States, Inc. Application for Approval of Advanced Metering Pilot Program. Issues: pilot program for demand response programs and advanced metering systems.
  203. Expert Testimony. Docket EO07040278 (2007). Before the New Jersey Board of Public Utilities. In the Matter of the Petition of Public Service Electric & Gas Company for Approval of a Solar Energy Program and An Associated Cost Recovery Mechanism. On the Behalf of the Department of the Public Advocate, Division of Rate Counsel. Issues: renewable energy market development, solar energy development, SREC markets, rate impact analysis, cost recovery issues.
  204. Expert Testimony: Docket Number 05-057-T01 (2007). Before the Utah Public Service

- Commission. In the Matter of: Joint Application of Questar Gas Company, the Division of Public Utilities, and Utah Clean Energy for Approval of the Conservation Enabling Tariff Adjustment Options and Accounting Orders. On the behalf of the Utah Committee of Consumer Services. Issues: Revenue Decoupling, Demand-side Management; Energy Efficiency policies. (Direct, Rebuttal, and Surrebuttal Testimony)
205. Expert Testimony (Non-sworn rulemaking testimony) Docket Number RR-2008, (2007). Before the Louisiana Tax Commission. In re: Commission Consideration of Amendment and/or Adoption of Tax Commission Real/Personal Property Rules and Regulations. Issues: Louisiana oil and natural gas production trends, appropriate cost measures for wells and subsurface property, economic lives and production decline curve trends.
206. Expert Report, Recommendation, and Proposed Rule: Docket Number R-29213 & 29213-A, ex parte, (2007). Before the Louisiana Public Service Commission. In re: Investigation to determine if it is appropriate for LPSC jurisdictional electric utilities to provide and install time-based meters and communication devices for each of their customers which enable such customers to participate in time-based pricing rate schedules and other demand response programs. On the behalf of the Louisiana Public Service Commission Staff. Report and Recommendation. Issues: demand response programs, advanced meter systems, cost recovery issues, energy efficiency issues, regulatory issues.
207. Expert Report, Recommendation, and Proposed Rule: Docket Number R-29712, ex parte, (2007) Before the Louisiana Public Service Commission. In re: Investigation into the ratemaking and generation planning implications of nuclear construction in Louisiana. On the behalf of the Louisiana Public Service Commission Staff. Report and Recommendation. Issues: nuclear cost power plant development, generation planning issues, and cost recovery issues.
208. Expert Testimony, Case Number U-14893, (2006). Before the Michigan Public Service Commission. In the Matter of SEMCO Energy Gas Company for Authority to Redesign and Increase Its Rates for the Sale and Transportation of Natural Gas In its MPSC Division and for Other Relief. On the behalf of the Michigan Attorney General. Issues: Rate Design, revenue decoupling, financial analysis, demand-side management program and energy efficiency policy. (Direct and Rebuttal Testimony).
209. Expert Report, Recommendation, and Proposed Rule: Docket Number R-29380, ex parte, (2006). Before the Louisiana Public Service Commission. In re: An Investigation Into the Ratemaking and Generation Planning Implications of the U.S. EPA Clean Air Interstate Rule. On the behalf of the Louisiana Public Service Commission Staff. Report and Recommendation. Issues: environmental regulation and cost recovery; allowance allocations and air credit markets; ratepayer impacts of new environmental regulations.
210. Expert Affidavit Before the Louisiana Tax Commission (2006). On behalf of ANR Pipeline, Tennessee Gas Transmission and Southern Natural Gas Company. Issues: Competitive nature of interstate and intrastate transportation services.
211. Expert Affidavit Before the 19<sup>th</sup> Judicial District Court (2006). Suit Number 491, 453 Section 26. On behalf of Transcontinental Pipeline Corporation, et.al. Issues: Competitive nature of interstate and intrastate transportation services.
212. Expert Testimony: Docket Number 05-057-T01 (2006). Before the Utah Public Service Commission. In the Matter of: Joint Application of Questar Gas Company, the Division of Public Utilities, and Utah Clean Energy for Approval of the Conservation Enabling Tariff

- Adjustment Options and Accounting Orders. On the behalf of the Utah Committee of Consumer Services. Issues: Revenue Decoupling, Demand-side Management; Energy Efficiency policies. (Rebuttal and Supplemental Rebuttal Testimony)
213. Legislative Testimony (2006). Senate Committee on Natural Resources. Senate Bill 655 Regarding Remediation of Oil and Gas Sites, Legacy Lawsuits, and the Deterioration of State Drilling.
  214. Expert Report: Rulemaking Docket (2005). Before the New Jersey Bureau of Public Utilities. In re: Proposed Rulemaking Changes Associated with New Jersey's Renewable Portfolio Standard. Expert Report. The Economic Impacts of New Jersey's Proposed Renewable Portfolio Standard. On behalf of the New Jersey Office of Ratepayer Advocate. Issues: Renewable Portfolio Standards, rate impacts, economic impacts, technology cost forecasts.
  215. Expert Testimony: Docket Number 2005-191-E. (2005). Before the South Carolina Public Service Commission. On behalf of NewSouth Energy LLC. In re: General Investigation Examining the Development of RFP Rules for Electric Utilities. Issues: Competitive bidding; merchant development. (Direct and Rebuttal Testimony).
  216. Expert Testimony: Docket No. 05-UA-323. (2005). Before the Mississippi Public Service Commission. On the behalf of Calpine Corporation. In re: Entergy Mississippi's Proposed Acquisition of the Attala Generation Facility. Issues: Asset acquisition; merchant power development; competitive bidding.
  217. Expert Testimony: Docket Number 050045-EI and 050188-EI. (2005). Before the Florida Public Service Commission. On the behalf of the Citizens of the State of Florida. In re: Petition for Rate Increase by Florida Power & Light Company. Issues: Load forecasting; O&M forecasting and benchmarking; incentive returns/regulation.
  218. Expert Testimony (non-sworn, rulemaking): Comments on Decreased Drilling Activities in Louisiana and the Role of Incentives. (2005). Louisiana Mineral Board Monthly Docket and Lease Sale. July 13, 2005
  219. Legislative Testimony (2005). Background and Impact of LNG Facilities on Louisiana. Joint Meeting of Senate and House Natural Resources Committee. Louisiana Legislature. May 19, 2005.
  220. Public Testimony. Docket No. U-21453. (2005). Technical Conference before the Louisiana Public Service Commission on an Investigation for a Limited Industrial Retail Choice Plan.
  221. Expert Testimony: Docket No. 2003-K-1876. (2005). On Behalf of Columbia Gas Transmission. Expert Testimony on the Competitive Market Structure for Gas Transportation Service in Ohio. Before the Ohio Board of Tax Appeals.
  222. Expert Report and Testimony: Docket No. 99-4490-J, *Lafayette City-Parish Consolidated Government, et. al. v. Entergy Gulf States Utilities, Inc. et. al.* (2005, 2006). On behalf of the City of Lafayette, Louisiana and the Lafayette Utilities Services. Expert Rebuttal Report of the Harborfront Consulting Group Valuation Analysis of the LUS Expropriation. Filed before 15<sup>th</sup> Judicial District Court, Lafayette, Louisiana.
  223. Expert Testimony: ANR Pipeline Company v. Louisiana Tax Commission (2005), Number 468,417 Section 22, 19th Judicial District Court, Parish of East Baton Rouge, State of Louisiana Consolidated with Docket Numbers: 480,159; 489,776;480,160; 480,161; 480,162; 480,163; 480,373; 489,776; 489,777; 489,778;489,779; 489,780; 489,803; 491,530; 491,744; 491,745;



- 491,746; 491,912;503,466; 503,468; 503,469; 503,470; 515,414; 515,415; and 515,416. In re: Market structure issues and competitive implications of tax differentials and valuation methods in natural gas transportation markets for interstate and intrastate pipelines.
224. Expert Report and Recommendation: Docket No. U-27159. (2004). On Behalf of the Louisiana Public Service Commission Staff. Expert Report on Overcharges Assessed by Network Operator Services, Inc. Before the Louisiana Public Service Commission.
  225. Expert Testimony: Docket Number 2004-178-E. (2004). Before the South Carolina Public Service Commission. On behalf of Columbia Energy LLC. In re: Rate Increase Request of South Carolina Electric and Gas. (Direct and Surrebuttal Testimony)
  226. Expert Testimony: Docket Number 040001-EI. (2004). Before the Florida Public Service Commission. On behalf of Power Manufacturing Systems LLC, Thomas K. Churbuck, and the Florida Industrial Power Users Group. In re: Fuel Adjustment Proceedings; Request for Approval of New Purchase Power Agreements. Company examined: Florida Power & Light Company.
  227. Expert Affidavit: Docket Number 27363. (2004). Before the Public Utilities Commission of Texas. Joint Affidavit on Behalf of the Cities of Texas and the Staff of the Public Utilities Commission of Texas Regarding Certified Issues. In Re: Application of Valor Telecommunications, L.P. For Authority to Establish Extended Local Calling Service (ELCS) Surcharges For Recovery of ELCS Surcharge.
  228. Expert Report and Testimony. Docket 1997-4665-PV, 1998-4206-PV, 1999-7380-PV, 2000-5958-PV, 2001-6039-PV, 2002-64680-PV, 2003-6231-PV. (2003) Before the Kansas Board of Tax Appeals. (2003). In the Matter of the Appeals of CIG Field Services Company from orders of the Division of Property Valuation. On the Behalf of CIG Field Services. Issues: the competitive nature of natural gas gathering in Kansas.
  229. Expert Report and Testimony: Docket Number U-22407. Before the Louisiana Public Service Commission (2002). On the Behalf of the Louisiana Public Service Commission Staff. Company examined: Louisiana Gas Services, Inc. Issues: Purchased Gas Acquisition audit, fuel procurement and planning practices.
  230. Expert Testimony: Docket Number 000824-EI. Before the Florida Public Service Commission. (2002). On the Behalf of the Citizens of the State of Florida. Company examined: Florida Power Corporation. Issues: Load Forecasts and Billing Determinants for the Projected Test Year.
  231. Public Testimony: Louisiana Board of Commerce and Industry (2001). Testimony on the Economic Impacts of Merchant Power Generation.
  232. Expert Testimony: Docket Number 24468. (2001). On the Behalf of the Texas Office of Public Utility Counsel. Public Utility Commission of Texas Staff's Petition to Determine Readiness for Retail Competition in the Portion of Texas Within the Southwest Power Pool. Company examined: AEP-SWEPCO.
  233. Expert Report. (2001) On Behalf of David Liou and Pacific Richland Products, Inc. to Review Cogeneration Issues Associated with Dupont Dow Elastomers, L.L.C. (DDE) and the Dow Chemical Company (Dow).
  234. Expert Testimony: Docket Number 01-1049, Docket Number 01-3001. (2001) On behalf the Nevada Office of Attorney General, Bureau of Consumer Protection. Petition of Central

- Telephone Company-Nevada D/b/a Sprint of Nevada and Sprint Communications L.P. for Review and Approval of Proposed Revised Performance Measures and Review and Approval of Performance Measurement Incentive Plans. Before the Public Utilities Commission of Nevada.
235. Expert Affidavit: Multiple Dockets (2001). Before the Louisiana Tax Commission. On the Behalf of Louisiana Interstate Pipeline Companies. Testimony on the Competitive Nature of Natural Gas Transportation Services in Louisiana.
  236. Expert Affidavit before the Federal District Court, Middle District of Louisiana (2001). Issues: Competitive Nature of the Natural Gas Transportation Market in Louisiana. On behalf of a Consortium of Interstate Natural Gas Transportation Companies.
  237. Public Testimony: Louisiana Board of Commerce and Industry (2001). Testimony on the Economic and Ratepayer Benefits of Merchant Power Generation and Issues Associated with Tax Incentives on Merchant Power Generation and Transmission.
  238. Expert Testimony: Docket Number 01-1048 (2001). Before the Public Utilities Commission of Nevada. On the Behalf of the Nevada Office of the Attorney General, Bureau of Consumer Protection. Company analyzed: Nevada Bell Telephone Company. Issues: Statistical Issues Associated with Performance Incentive Plans.
  239. Expert Testimony: Docket 22351 (2001). Before the Public Utility Commission of Texas. On the Behalf of the City of Amarillo. Company analyzed: Southwestern Public Service Company. Issues: Unbundled cost of service, affiliate transactions, load forecasting.
  240. Expert Testimony: Docket 991779-EI (2000). Before the Florida Public Service Commission. On the Behalf of the Citizens of the State of Florida. Companies analyzed: Florida Power & Light Company; Florida Power Corporation; Tampa Electric Company; and Gulf Power Company. Issues: Competitive Nature of Wholesale Markets, Regional Power Markets, and Regulatory Treatment of Incentive Returns on Gains from Economic Energy Sales.
  241. Expert Testimony: Docket 990001-EI (1999). Before the Florida Public Service Commission. On the Behalf of the Citizens of the State of Florida. Companies analyzed: Florida Power & Light Company; Florida Power Corporation; Tampa Electric Company; and Gulf Power Company. Issues: Regulatory Treatment of Incentive Returns on Gains from Economic Energy Sales.
  242. Expert Testimony: Docket 950495-WS (1996). Before the Florida Public Service Commission. On the Behalf of the Citizens of the State of Florida. Company analyzed: Southern States Utilities, Inc. Issues: Revenue Repression Adjustment, Residential and Commercial Demand for Water Service.
  243. Legislative Testimony. Louisiana House of Representatives, Special Subcommittee on Utility Deregulation. (1997). On Behalf of the Louisiana Public Service Commission Staff. Issue: Electric Restructuring.
  244. Expert Testimony: Docket 940448-EG -- 940551-EG (1994). Before the Florida Public Service Commission. On the Behalf of the Legal Environmental Assistance Foundation. Companies analyzed: Florida Power & Light Company; Florida Power Corporation; Tampa Electric Company; and Gulf Power Company. Issues: Comparison of Forecasted Cost-Effective Conservation Potentials for Florida.
  245. Expert Testimony: Docket 920260-TL, (1993). Before the Florida Public Service

- Commission. On the Behalf of the Florida Public Service Commission Staff. Company analyzed: BellSouth Communications, Inc. Issues: Telephone Demand Forecasts and Empirical Estimates of the Price Elasticity of Demand for Telecommunication Services.
246. Expert Testimony: Docket 920188-TL, (1992). Before the Florida Public Service Commission. On the Behalf of the Florida Public Service Commission Staff. Company analyzed: GTE-Florida. Issues: Telephone Demand Forecasts and Empirical Estimates of the Price Elasticity of Demand for Telecommunication Services.

### **REFEREE AND EDITORIAL APPOINTMENTS**

Contributor, 2014-2018, *Wall Street Journal, Journal Reports*, Energy

Editorial Board Member, 2015-2017, *Utilities Policy*

Referee, 2014-Current, *Utilities Policy*

Referee, 2010-Current, *Economics of Energy & Environmental Policy*

Referee, 1995-Current, *Energy Journal*

Contributing Editor, 2000-2005, *Oil, Gas and Energy Quarterly*

Referee, 2005, *Energy Policy*

Referee, 2004, *Southern Economic Journal*

Referee, 2002, *Resource & Energy Economics*

Committee Member, IAEE/USAEE Student Paper Scholarship Award Committee, 2003

### **PROPOSAL TECHNICAL REVIEWER**

California Energy Commission, Public Interest Energy Research (PIER) Program (1999).

### **PROFESSIONAL ASSOCIATIONS**

American Economic Association, American Statistical Association, Southern Economic Association, Western Economic Association, International Association of Energy Economists (“IAEE”), United States Association of Energy Economics (“USAEE”), the National Association for Business Economics (“NABE”), and the Energy Bar Association (National and Louisiana Chapter; current Board member of LA chapter).

### **HONORS AND AWARDS**

*Baton Rouge Business Report*, Selected as one of the “Capital Region 500” (2023).

National Association of Regulatory Utility Commissioners (NARUC). Best Paper Award for papers published in the *Journal of Applied Regulation* (2004).

*Baton Rouge Business Report*, Selected as “Top 40 Under 40” (2003).

Omicron Delta Epsilon (1992-Current).

Interstate Oil and Gas Compact Commission (IOGCC) "Best Practice" Award for Research on the Economic Impact of Oil and Gas Activities on State Leases for the Louisiana Department of Natural Resources (2003).

Distinguished Research Award, Academy of Legal, Ethical and Regulatory Issues, Allied Academics (2002).

Florida Public Service Commission, Staff Excellence Award for Assistance in the Analysis of Local Exchange Competition Legislation (1995).

### **TEACHING EXPERIENCE**

Energy and the Environment (Survey Course)

Principles of Microeconomic Theory

Principles of Macroeconomic Theory

Lecturer, Environmental Management and Permitting. Lecture in Natural Gas Industry, LNG and Markets.

Lecturer, Electric Power Industry Environmental Issues, Field Course on Energy and the Environment. (Dept. of Environmental Studies).

Lecturer, Electric Power Industry Trends, Principles Course in Power Engineering (Dept. of Electric Engineering).

Lecturer, LSU Honors College, Senior Course on "Society and the Coast."

Continuing Education. Electric Power Industry Restructuring for Energy Professionals.

"The Gulf Coast Energy Situation: Outlook for Production and Consumption." Educational Course and Lecture Prepared for the Foundation for American Communications and the Society for Professional Journalists, New Orleans, LA, December 2, 2004

"The Impact of Hurricane Katrina on Louisiana's Energy Infrastructure and National Energy Markets." Educational Course and Lecture Prepared for the Foundation for American Communications and the Society for Professional Journalists, Houston, TX, September 13, 2005.

"Forecasting for Regulators: Current Issues and Trends in the Use of Forecasts, Statistical, and Empirical Analyses in Energy Regulation." Instructional Course for State Regulatory Commission Staff. Institute of Public Utilities, Kellogg Center, Michigan State University. July 8-9, 2010.

"Regulatory and Ratemaking Issues with Cost and Revenue Trackers." Michigan State University, Institute of Public Utilities. Advanced Regulatory Studies Program. September 29, 2010.

"Demand Modeling and Forecasting for Regulators." Michigan State University, Institute of Public Utilities. Advanced Regulatory Studies Program. September 30, 2010.

"Demand Modeling and Forecasting for Regulators." Michigan State University, Institute of Public Utilities, Forecasting Workshop, Charleston, SC. March 7-9, 2011.

"Regulatory and Cost Recovery Approaches for Smart Grid Applications." Michigan State University, Institute of Public Utilities, Smart Grid Workshop for Regulators. Charleston, SC. March 7-11, 2011.

"Regulatory and Ratemaking Issues Associated with Cost and Expense Adjustment Mechanisms." Michigan State University, Institute of Public Utilities, Advanced Regulatory Studies Program. Lansing, Michigan. September 28, 2011.

“Utility Incentives, Decoupling, and Renewable Energy Programs.” Michigan State University, Institute of Public Utilities, Advanced Regulatory Studies Program. Lansing, Michigan. September 29, 2011.

“Regulatory and Cost Recovery Approaches for Smart Grid Applications.” Michigan State University, Institute of Public Utilities, Smart Grid Workshop for Regulators. Charleston, SC. March 6-8, 2012.

“Traditional and Incentive Ratemaking Workshop.” New Mexico Public Utilities Commission Staff. Santa Fe, NM October 18, 2012.

“Traditional and Incentive Ratemaking Workshop.” New Jersey Board of Public Utilities Staff. Newark, NJ. March 1, 2013.

“Natural Gas Issues and Recent Market Trends.” Michigan State University Institute of Public Utilities, GridSchool Regulatory Studies Program, East Lansing, Mich., March 29, 2017.

“Gas Supply Planning and Procurement: Regulatory Overview and issues.” Michigan State University Institute of Public Utilities, Basic Regulatory Studies Program, East Lansing, Mich., Aug 17, 2017.

“Natural Gas Supply Issues and Challenges.” Michigan State University Institute of Public Utilities, Basic Regulatory Studies Program, East Lansing, Mich., Aug 17, 2017.

“Incentives, Risk and Changes in the Nature of Regulation.” Michigan State University Institute of Public Utilities, Basic Regulatory Studies Program, East Lansing, Mich., Aug 18, 2017.

“Traditional and Alternative Forms of Regulation: Background and Overview.” Michigan State University Institute of Public Utilities, Advanced Regulatory Studies Program, East Lansing, Mich., October 2, 2017.

“Traditional and Alternative Forms of Regulation: Utility and policy motivations for risk and change.” Michigan State University Institute of Public Utilities, Advanced Regulatory Studies Program, East Lansing, Mich., October 2, 2017.

“Traditional and Alternative Forms of Regulation: Incentives and Formula Based Methods.” Michigan State University Institute of Public Utilities, Advanced Regulatory Studies Program, East Lansing, Mich., October 2, 2017.

## **THESIS/DISSERTATIONS COMMITTEES**

### Active:

1 Thesis Committee Memberships (Environmental Studies)

2 Ph.D. Dissertation Committee (Economics)

### Completed:

8 Thesis Committee Memberships (Environmental Studies, Geography)

4 Doctoral Committee Memberships (Information Systems & Decision Sciences, Agricultural and Resource Economics, Economics, Education and Workforce Development).

2 Doctoral Examination Committee Membership (Information Systems & Decision Sciences, Education and Workforce Development)

1 Senior Honors Thesis (Journalism, Loyola University)

### **LSU SERVICE AND COMMITTEE MEMBERSHIPS**

Committee Member, Energy Education Curriculum Committee. E.J. Ourso College of Business. LSU (2016-Current).

Chairman, LSU Energy Initiative/LSU Energy Council (2014-Current).

Co-Director & Steering Committee Member, LSU Coastal Marine Institute (2009-2014).

CES Promotion Committee, Division of Radiation Safety (2006).

Search Committee Chair (2006), Research Associate 4 Position.

Search Committee Member (2005), Research Associate 4 Position.

Search Committee Member (2005), CES Communications Manager.

LSU Graduate Research Faculty, Associate Member (1997-2004); Full Member (2004-2010); Affiliate Member with Full Directional Rights (2011-2014); Full Member (2014-current).

LSU Faculty Senate (2003-2006).

Conference Coordinator. (2005-Current) Center for Energy Studies Conference on Alternative Energy.

LSU CES/SCE Public Art Selection Committee (2003-2005).

Conference Coordinator. Center for Energy Studies Annual Energy Conference/Summit. (2003-Current).

Conference Coordinator. Center for Energy Studies Seminar Series on Electric Utility Restructuring and Wholesale Competition. (1996-2003).

Co-Chairman, Review Committee, Louisiana Port Construction and Development Priority Program Rules and Regulations, On Behalf of the LSU Ports and Waterways Institute. (1997).

LSU Main Campus Cogeneration/Turbine Project, (1999-2000).

LSU InterCollege Environmental Cooperative. (1999-2001).

LSU Faculty Senate Committee on Public Relations (1997-1999).

LSU Faculty Senate Committee on Student Retention and Recruitment (1999-2003).

### **PROFESSIONAL SERVICE**

Board Member (2018). Energy Bar Association, Louisiana Chapter.

Program Committee Member (2017). Gulf Coast Power Association Conference. New Orleans.

Program Committee Member (2016). Gulf Coast Power Association Conference. New Orleans.

Program Committee Member (2015). Gulf Coast Power Association Workshop/Special Briefing. "Gulf Coast Disaster Readiness: A Past, Present and Future Look at Power and Industry Readiness in MISO South."

Advisor (2008). National Association of Regulatory Utility Commissioners. Study Committee on the Impact of Executive Drilling Moratoria on Federal Lands.

Steering Committee Member, Louisiana Representative (2008-Current). Southeast Agriculture & Forestry Energy Resources Alliance. Southern Policies Growth Board.

Advisor (2007-Current). National Association of State Utility Consumer Advocates (“NASUCA”), Natural Gas Committee.

Program Committee Chairman (2007-2008). U.S. Association of Energy Economics (“USAEE”) Annual Conference, New Orleans, LA

Finance Committee Chairman (2007-2008). USAEE Annual Conference, New Orleans, LA

Committee Member (2006), International Association for Energy Economics Nominating Committee.

Founding President (2005-2007) Louisiana Chapter, USAEE.

Secretary (2001) Houston Chapter, USAEE.

Advisor, Louisiana LNG Buyers/Developers Summit, Office of the Governor/Louisiana Department of Economic Development/Louisiana Department of Natural Resources, and Greater New Orleans, Inc. (2004).

# Base Revenue Impact

Alignment with Ten-Year Historical Trend	2025	2026	2027
<b>Company Forecast</b>			
Base Revenue under Present Rates (\$000)	\$1,480,727	\$1,774,352	\$1,874,427
MWh Sales	20,466,000	20,651,000	20,835,000
Base Revenues per KWh	\$0.072	\$0.086	\$0.090
<b>Revised Forecast</b>			
MWh Sales	21,300,806	21,560,533	21,823,427
Base Revenues per KWh	\$0.072	\$0.086	\$0.090
Base Revenue under Present Rates (\$000)	\$1,541,125	\$1,852,500	\$1,963,351
<b>Base Revenue</b>			
Revised Revenue	\$1,541,125	\$1,852,500	\$1,963,351
Company Revenue	\$1,480,727	\$1,774,352	\$1,874,427
<b>Base Revenue Impact (\$000)</b>	<b>\$60,399</b>	<b>\$78,148</b>	<b>\$88,924</b>

Source: Forecasted Energy Sales from Exhibit DED-4, Base Revenue at Present Rates from MFR E-13a., Company Response to OPC's 1st POD Nos (1-30) POD\_1\_1, Attachments "(BS 14367) 2026 SYA Base Rates" and "(BS 14368) 2027 SYA Base Rates"



# Base Revenue Impact

Adjustment for Prior Forecast Variances	2025	2026	2027
<b>Company Forecast</b>			
Base Revenue under Present Rates (\$000)	\$1,480,727	\$1,774,352	\$1,874,427
MWh Sales	20,466,000	20,651,000	20,835,000
Base Revenues per KWh	\$0.072	\$0.086	\$0.090
<b>Test Year Energy Sales Forecast Variances</b>			
2013 Rate Case	-0.8%	-0.8%	-0.8%
2021 Rate Case	-3.4%	-3.4%	-3.4%
Average	-2.1%	-2.1%	-2.1%
<b>Revised Forecast</b>			
MWh Sales	20,894,877	21,083,754	21,271,610
Base Revenues per KWh	\$0.072	\$0.086	\$0.090
Base Revenue under Present Rates (\$000)	\$1,511,756	\$1,811,535	\$1,913,707
<b>Base Revenue</b>			
Revised Revenue	\$1,511,756	\$1,811,535	\$1,913,707
Company Revenue	\$1,480,727	\$1,774,352	\$1,874,427
<b>Base Revenue Impact (\$000)</b>	<b>\$31,030</b>	<b>\$37,183</b>	<b>\$39,280</b>

Source: Test Year Energy Sales Forecast Variances from Exhibit DED-6, Base Revenue at Present Rates from MFR E-13a., Company Response to OPC's 1st POD Nos (1-30) POD\_1\_1, Attachments "(BS 14367) 2026 SYA Base Rates" and "(BS 14368) 2027 SYA Base Rates"

# Base Revenue Impact

Removal of Out-of-Model Adjustments	2025	2026	2027
<b>Company Forecast</b>			
Base Revenue under Present Rates (\$000)	\$1,480,727	\$1,774,352	\$1,874,427
MWh Sales	20,466,000	20,651,000	20,835,000
Base Revenues per KWh	\$0.072	\$0.086	\$0.090
<b>Out-of-Model Adjustments (MWh)</b>			
Conservation Forecast	(93,294)	(142,536)	(193,189)
Electric Vehicle Forecast	173,285	275,681	386,375
Rooftop Solar Forecast	(249,449)	(368,875)	(486,376)
Total Adjustment	(169,457)	(235,730)	(293,190)
<b>Revised Forecast</b>			
MWh Sales	20,635,457	20,886,730	21,128,190
Base Revenues per KWh	\$0.072	\$0.086	\$0.090
Base Revenue under Present Rates (\$000)	\$1,492,987	\$1,794,606	\$1,900,804
<b>Base Revenue</b>			
Revised Revenue	\$1,492,987	\$1,794,606	\$1,900,804
Company Revenue	\$1,480,727	\$1,774,352	\$1,874,427
<b>Base Revenue Impact (\$000)</b>	<b>\$12,260</b>	<b>\$20,254</b>	<b>\$26,377</b>

Source: Out-of-Model adjustments from Exhibit DED-2, Base Revenue at Present Rates from MFR E-13a., Company Response to OPC's 1st POD Nos (1-30) POD\_1\_1, Attachments "(BS 14367) 2026 SYA Base Rates" and "(BS 14368) 2027 SYA Base Rates"

# Out-of-Model Adjustments

	2025	2026	2027
<b>Out-of-Model MWh Adjustments:</b>			
Energy Efficiency	(93,294)	(142,536)	(193,189)
Electric Vehicle Adoption	173,285	275,681	386,375
Solar Installations	(249,449)	(368,875)	(486,376)
<b>Total</b>	<b>(169,457)</b>	<b>(235,730)</b>	<b>(293,190)</b>
<b>Company MWh Sales Forecast:</b>			
Total After Adjustments	20,466,000	20,651,000	20,835,000
Adjustments	(169,457)	(235,730)	(293,190)
<b>Total Before Adjustments</b>	<b>20,635,457</b>	<b>20,886,730</b>	<b>21,128,190</b>

Source Company Sales Forecast from Exhibit No. LC-1, Out-of-Model Adjustments from Company Response to Staff's 1st Request for PODs (1-15), Attachment "(BS 30329)MODEL\_INPUTS\_ExogenousFcsts".

# Company Energy Sales and Customer Forecasts

Docket No. 20240026-EI  
 Company Energy Sales  
 Exhibit DED-3, Page 1 of 1

	MWh Sold	Number of Customers	MWh Per Customer	Change in Use		Percent Change	
				Use from Existing Customers	Use from New Customers	Number of Customers	MWh Per Customer
2008	18,989,605	667,266	28.5				
2009	18,774,789	666,747	28.2	(200,202)	(14,614)	-0.1%	-1.05%
2010	19,213,462	670,991	28.6	317,148	121,525	0.6%	1.69%
2011	18,563,569	675,799	27.5	(781,964)	132,071	0.7%	-4.07%
2012	18,408,580	684,236	26.9	(381,977)	226,988	1.2%	-2.06%
2013	18,417,662	694,735	26.5	(269,250)	278,332	1.5%	-1.46%
2014	18,525,739	706,160	26.2	(191,652)	299,729	1.6%	-1.04%
2015	19,006,474	718,712	26.4	148,795	331,940	1.8%	0.80%
2016	19,234,525	730,503	26.3	(82,412)	310,463	1.6%	-0.43%
2017	19,186,517	744,691	25.8	(413,553)	365,545	1.9%	-2.15%
2018	19,631,465	756,253	26.0	144,812	300,136	1.6%	0.75%
2019	19,783,567	771,960	25.6	(250,432)	402,534	2.1%	-1.28%
2020	19,953,730	786,048	25.4	(187,459)	357,622	1.8%	-0.95%
2021	20,092,643	802,049	25.1	(261,938)	400,851	2.0%	-1.31%
2022	20,466,729	819,766	25.0	(68,246)	442,332	2.2%	-0.34%
2023	20,790,700	834,144	24.9	(34,395)	358,366	1.8%	-0.17%
2024	20,315,000	848,259	23.9	(813,741)	338,041	1.7%	-3.91%
2025	20,466,000	862,443	23.7	(185,590)	336,590	1.7%	-0.91%
2026	20,651,000	876,416	23.6	(144,246)	329,246	1.6%	-0.70%
2027	20,835,000	890,177	23.4	(138,083)	322,083	1.6%	-0.67%

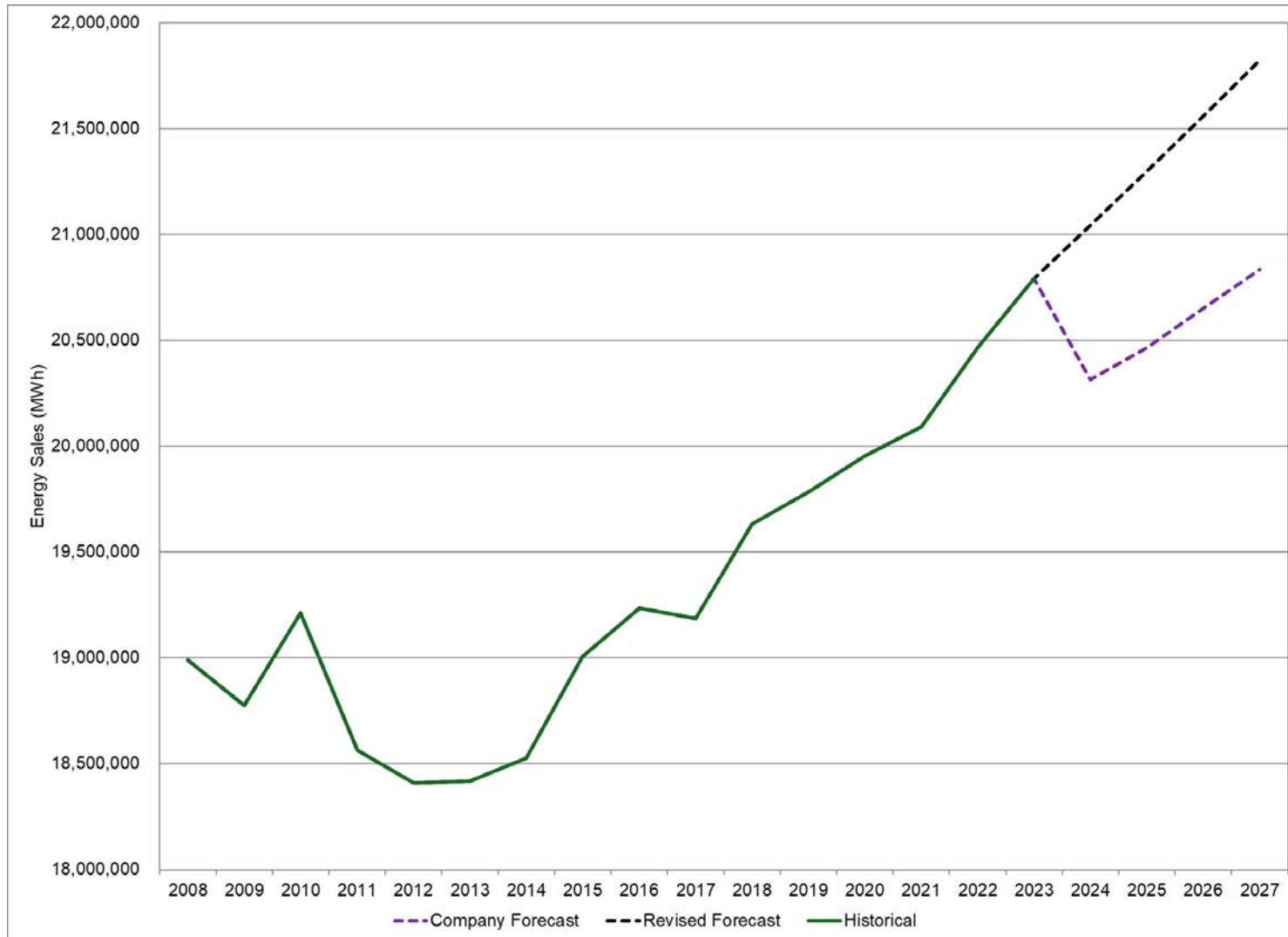
# Revised Sales Forecast based on Ten-Year Trend

Docket No. 20240026-EI  
 Revised Sales Forecast  
 Exhibit DED-4, Page 1 of 2

	MWh Sales				Number of Customers			
	Company	Revised	Difference	Percent Difference	Company	Revised	Difference	Percent Difference
2008	18,989,605	18,989,605			667,266	667,266		
2009	18,774,789	18,774,789			666,747	666,747		
2010	19,213,462	19,213,462			670,991	670,991		
2011	18,563,569	18,563,569			675,799	675,799		
2012	18,408,580	18,408,580			684,236	684,236		
2013	18,417,662	18,417,662			694,735	694,735		
2014	18,525,739	18,525,739			706,160	706,160		
2015	19,006,474	19,006,474			718,712	718,712		
2016	19,234,525	19,234,525			730,503	730,503		
2017	19,186,517	19,186,517			744,691	744,691		
2018	19,631,465	19,631,465			756,253	756,253		
2019	19,783,567	19,783,567			771,960	771,960		
2020	19,953,730	19,953,730			786,048	786,048		
2021	20,092,643	20,092,643			802,049	802,049		
2022	20,466,729	20,466,729			819,766	819,766		
2023	20,790,700	20,790,700			834,144	834,144		
2024	20,315,000	21,044,207	729,207	3.6%	848,259	849,539	1,280	0.2%
2025	20,466,000	21,300,806	834,806	4.1%	862,443	865,218	2,775	0.3%
2026	20,651,000	21,560,533	909,533	4.4%	876,416	881,186	4,770	0.5%
2027	20,835,000	21,823,427	988,427	4.7%	890,177	897,449	7,272	0.8%

Source: Historic Sales and Customers from FERC Form 1, Company's Sales and Customer Forecast from Exhibit No. LC-1

# Revised Sales Forecast based on Ten-Year Trend



Source: Historic Sales from FERC Form 1, Company's Sales Forecast from Exhibit No. LC-1

# Usage per Customer Utility Survey

Year	Number of Utilities w. Growth > TECO	Number of Utilities w. Growth ≤ TECO	Percent of Utilities w. Growth ≤ TECO
2009	73	93	56%
2010	163	3	2%
2011	153	13	8%
2012	148	18	11%
2013	160	6	4%
2014	159	7	4%
2015	153	13	8%
2016	149	17	10%
2017	133	33	20%
2018	161	5	3%
2019	113	53	32%
2020	86	80	48%
2021	162	4	2%
2022	159	7	4%
<b>Total</b>	<b>1,972</b>	<b>352</b>	<b>18%</b>

# Forecast Variance Analysis

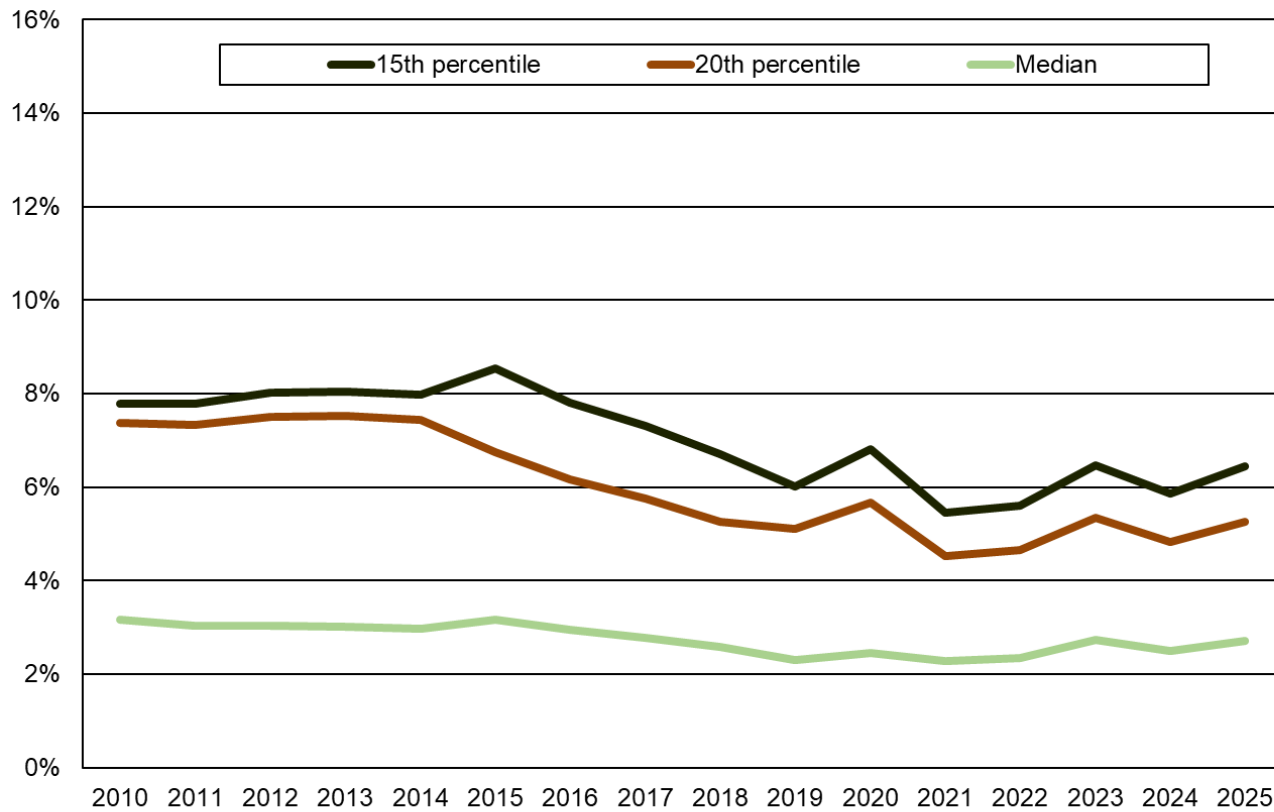
Year	MWh Sales			Number of Customers		
	Actual	Forecast	Percent Variance	Actual	Forecast	Percent Variance
2008	18,989,605			667,266		
2009	18,774,789			666,747		
2010	19,213,462			670,991		
2011	18,563,569			675,799		
2012	18,408,580			684,236		
2013	18,417,662	18,202,000	-1.2%	694,735	692,125	-0.4%
2014	18,525,739	18,370,000	-0.8%	706,160	701,415	-0.7%
2015	19,006,474	18,552,000	-2.4%	718,712	712,504	-0.9%
2016	19,234,525	18,795,000	-2.3%	730,503	724,281	-0.9%
2017	19,186,517	19,039,000	-0.8%	744,691	735,481	-1.2%
2018	19,631,465	19,287,000	-1.8%	756,253	746,489	-1.3%
2019	19,783,567	19,529,000	-1.3%	771,960	757,529	-1.9%
2020	19,953,730	19,749,000	-1.0%	786,048	768,510	-2.2%
2021	20,092,643	19,589,000	-2.5%	802,049	799,337	-0.3%
2022	20,466,729	19,781,000	-3.4%	819,766	812,436	-0.9%
2023	20,790,700	19,972,000	-3.9%	834,144	825,047	-1.1%

Source: Historic data from FERC Form 1, Forecast for 2013-2020 from 2013 General Rate Case, Docket No. 130040-EI, Witness Cifuentes Direct Testimony, Exhibit LLC-1, Forecast for 2021-2023 from 2021 General Rate Case, Docket No. 20210034-EI, Witness Cifuentes Direct Testimony, Exhibit LLC-1.



# Energy Affordability Index

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
15th percentile	7.8%	7.8%	8.0%	8.0%	8.0%	8.5%	7.8%	7.3%	6.7%	6.0%	6.8%	5.5%	5.6%	6.5%	5.9%	6.4%
20th percentile	7.4%	7.3%	7.5%	7.5%	7.4%	6.8%	6.2%	5.8%	5.3%	5.1%	5.7%	4.5%	4.7%	5.3%	4.8%	5.3%
Median	3.2%	3.0%	3.0%	3.0%	3.0%	3.2%	3.0%	2.8%	2.6%	2.3%	2.5%	2.3%	2.3%	2.7%	2.5%	2.7%



Source: 2010-2024 Company tariffs, 2025 proposed tariff, income and rent from US Census Bureau, energy consumption from US Energy Information Administration (EIA).