

**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of The Dayton	)	
Power and Light Company for Approval of its	)	Case No: 16-395-EL-SSO
Electric Security Plan.	)	

In the Matter of the Application of The Dayton	)	
Power and Light Company for Approval of	)	Case No. 16-396-EL-ATA
Revised Tariffs.	)	

In the Matter of the Application of The Dayton	)	
Power and Light Company for Approval of Certain	)	Case No. 16-397-EL-AAM
Accounting Authority.	)	

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**DIRECT TESTIMONY**

**OF**

**BRUCE BURCAT**

**ON BEHALF OF**

**THE MID-ATLANTIC RENEWABLE ENERGY COALITION**

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*Attorney for Mid-Atlantic Renewable  
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**November 21, 2016**

1 **Q. Please state your name and business address.**

2 A. My name is Bruce Burcat. My business address is 29 North State Street, Dover,  
3 Delaware.

4 **Q. By whom are you employed and in what capacity?**

5 A. I am employed by the Mid-Atlantic Renewable Energy Coalition (“MAREC”) as its  
6 Executive Director.

7 **Q. Please provide a description of the Mid-Atlantic Renewable Energy Coalition.**

8 A. MAREC is a nonprofit organization that was formed to help advance the opportunities  
9 for renewable energy development primarily in the region where the Regional Transmission  
10 Organization, PJM Interconnection, LLC (“PJM”), operates. MAREC’s footprint includes the  
11 District of Columbia, Maryland, New Jersey, Delaware, Pennsylvania, Ohio, Virginia, West  
12 Virginia, and North Carolina. MAREC’s membership consists of wind developers, wind turbine  
13 manufacturers, service companies, nonprofit organizations, and a transmission company  
14 dedicated to the growth of renewable energy technologies to improve our environment, boost  
15 economic development in the region, and diversify our electric generation portfolio, thereby  
16 enhancing energy security. The primary areas of focus of MAREC are to: work with state  
17 regulators to develop rules and supportive policies for renewable energy; provide education and  
18 expertise on the environmental sustainability of wind energy; and offer technical expertise and  
19 advice on integrating variable wind energy resources into the electric grid.

20 **Q. Please describe your professional background.**

21 A. I am an attorney with over twenty-five years’ experience in the utility and energy  
22 regulatory fields. I am responsible for MAREC’s efforts to promote the growth and  
23 development of renewable energy in its nine jurisdictions. I joined the Mid-Atlantic Renewable

1 Energy Coalition as its Executive Director in 2010 after serving for nearly fifteen years as the  
2 Executive Director of the Delaware Public Service Commission. In that capacity, I was  
3 responsible for the major policy and technical positions taken by Commission staff in  
4 proceedings before the Delaware Commission. I was involved in all facets of utility regulation,  
5 including the restructuring of Delaware's electricity market and the reintroduction of integrated  
6 resource planning for Delaware's major electric utility. As part of the integrated planning  
7 process, Delaware's major electric utility was required to incorporate electricity generated from  
8 renewable resources into its long-term procurement plan. My office supervised the compliance  
9 by electric suppliers with the State's renewable portfolio standard. I was intricately involved in  
10 the two-year process that resulted in the first purchase power agreement in the United States for  
11 the energy generated from an offshore wind farm that will be located off the coast of Delaware.  
12 Prior to coming to the Delaware Commission, I was an attorney for the New Jersey Division of  
13 Rate Counsel. Before that position I served as a Senior Rate Attorney for General Waterworks  
14 Management and Service Company.

15 **Q. Have you previously provided testimony in regulatory proceedings or testified**  
16 **before a legislative body?**

17 **A.** In my position as Executive Director of MAREC, I provided pre-filed written testimony  
18 and stood for cross-examination before the Public Utilities Commission of Ohio ("Ohio  
19 Commission") in *In re Ohio Edison Co., et al., for Authority to Provide for a Standard Service*  
20 *Offer Pursuant to R.C. 4928.143 in the Form of an Electric Security Plan* (Case No. 14-1297-  
21 EL-SSO) and *In re Ohio Power Co.'s Proposal to Enter into an Affiliate Power Purchase*  
22 *Agreement for Inclusion in the Power Purchase Agreement Rider* (Case No. 14-1693-EL-RDR,  
23 et al.). I have also provided written testimony related to the procurement of renewable energy

1 through long-term contracts in *In re the 2010 Long-Term Forecast Report of Duke Energy Ohio,*  
2 *Inc.* (Case No. 10-503-EL-FOR). In another proceeding before the Ohio Commission, I  
3 provided testimony on the cost cap provision of Ohio's Alternative Energy Portfolio Standard in  
4 *In re Review of the Alternative Energy Rider of Ohio Edison Co., et al.* (Case No. 11-5201-EL-  
5 RDR). I have also testified before the Maryland Public Service Commission in its proceeding to  
6 approve the merger of Exelon Corporation and Constellation Energy Group, Inc. I also testified  
7 as a witness in two of the Exelon/Pepco merger proceedings; one before the District of Columbia  
8 Public Service Commission and the other before the Maryland Public Service Commission  
9 having submitted pre-filed written testimony and stood for cross-examination on behalf of  
10 MAREC in both matters.

11 I have also appeared before legislative committees in Ohio, Pennsylvania, New Jersey,  
12 and Maryland to testify regarding legislation and issues concerning renewable energy policy. In  
13 my role as the Executive Director of the Delaware Commission, I testified before the Federal  
14 Energy Regulatory Commission on the impact of electric transmission congestion on the  
15 Delmarva Peninsula and had appeared numerous times before the Delaware House and Senate to  
16 respond to questions on proposed energy legislation and major energy issues facing the State.

17 **Q. Please describe your educational background.**

18 **A.** I am a graduate of the University of Delaware. I received my Juris Doctor degree from  
19 Rutgers University School of Law – Camden and a Masters in Law (LL.M) in Taxation from the  
20 Villanova University School of Law.

21 **Q. What is the purpose of your testimony?**

1 A. The purpose of my testimony is to address the Dayton Power and Light Company's  
2 ("DP&L's") application ("Application") seeking approval of DP&L's proposed electric security  
3 plan ("ESP").

4 **Q. What is DP&L proposing in its Application?**

5 A. In its Application, as amended, DP&L is proposing an ESP for a term of 2017 through  
6 2023. DP&L's proposed ESP includes the creation of a Distribution Modernization Rider  
7 ("DMR"), approval of a Distribution Investment Rider, and authorization to recover deferred  
8 Ohio Valley Electric Corporation costs through a Reconciliation Rider. During the term of the  
9 ESP, DP&L proposes to receive \$145 million per year under the DMR to finance transmission  
10 and distribution infrastructure modernization investments. In addition, DP&L proposes to  
11 introduce a Clean Energy Rider, which, according to DP&L, would facilitate future investment  
12 in renewable and advanced technologies and will recover currently unknown environmental  
13 compliance costs.

14 **Q. Do you believe DP&L's proposal is in the public interest?**

15 A. I do not have a judgment on whether the proposal as specifically currently proposed is in  
16 the public interest. However, MAREC does regard long-term power purchase agreements  
17 through competitive procurements as a vital component of well-functioning energy markets.  
18 MAREC also argues that the proposal can be improved by adding a competitive solicitation for  
19 approximately 600 MWs of fixed-priced wind energy to the supply proposed by DP&L. My  
20 testimony will further explain our reasoning for this recommendation.

21 **Q. Can you explain the importance of long-term power purchase agreements in energy**  
22 **markets?**

1   **A.**     Yes. Long-term contracts serve two essential functions in energy markets: (1) they  
2   enable project finance for new projects and assist in ensuring revenue adequacy for existing large  
3   generators; and (2) they provide a hedge against volatile energy prices.

4   **Q.**     **Can you explain how long-term power purchase agreements enable project finance**  
5   **and assist in ensuring revenue adequacy for existing large generators?**

6   **A.**     Yes. Energy markets require large-scale capital investments. Large-scale capital  
7   investments require large-scale financing. Large-scale financing requires some meaningful  
8   degree of certainty that adequate returns can be achieved. In fact, virtually the entire electricity  
9   system has been built based on government approved, long-term, guaranteed rates of return for  
10  just such reasons. This is still the case for the transmission and distribution system. However,  
11  electricity restructuring and wholesale regional power markets eliminated long-term, guaranteed  
12  rates of return for generation and introduced “electricity competition” at both the wholesale and  
13  retail levels. This fundamental change has not created a problem so long as new generation  
14  investments were not required and energy prices were high. However, the dearth of  
15  opportunities for long-term contracts and falling energy prices has created a lack of incentives  
16  both for new generation and concerns with revenue adequacy for existing generation. The latter  
17  problem is referred to as the “Missing Money” problem and has been attempted to be partly  
18  remedied by the creation of a wholesale capacity market by PJM.<sup>1</sup> The “Missing Money”  
19  problem arises, in short, because prices in energy markets reflect short-term variable costs,  
20  however, power generators must recover not only short-term variable costs, but long-term capital  
21  costs in order to achieve revenue adequacy. As a result, short-term energy prices can fail to

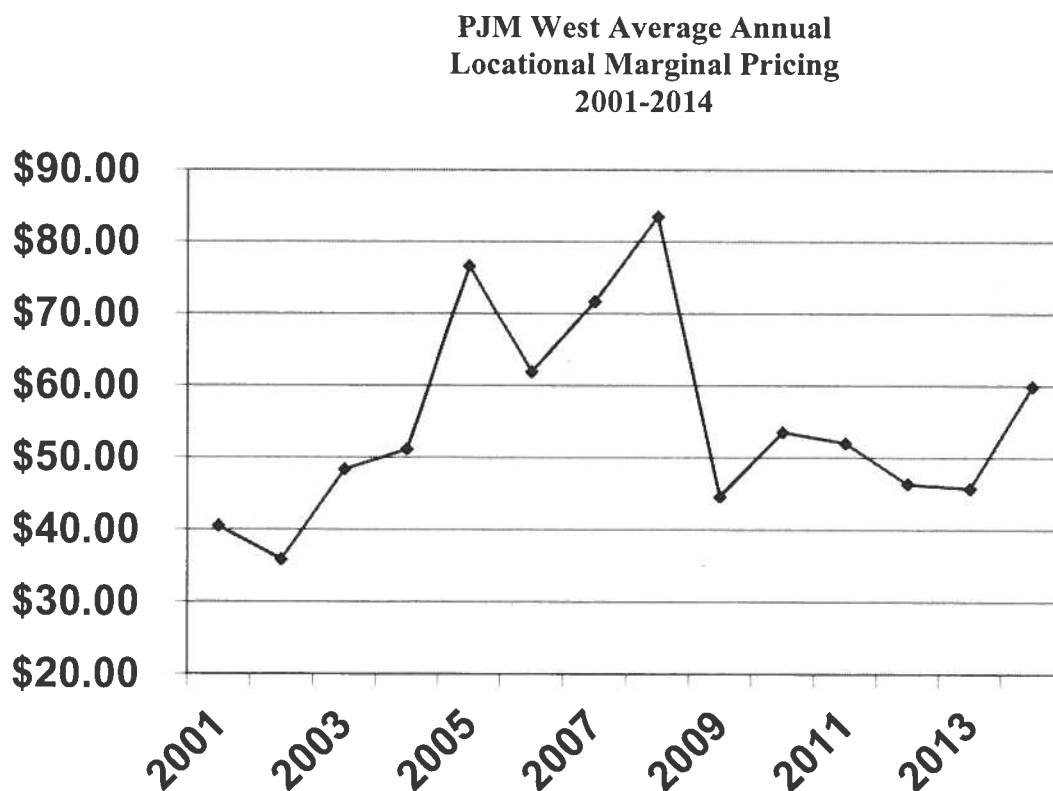
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<sup>1</sup> Resource Adequacy Mandates and Scarcity Pricing (“Belts and Suspenders”)(Feb. 23, 2006), Comments to the Federal Energy Regulatory Commission, Docket Nos. ER05-1410-000 and EL05-148-000.  
[http://www.hks.harvard.edu/fs/whogan/Hogan\\_PJM\\_Energy\\_Market\\_022306.pdf](http://www.hks.harvard.edu/fs/whogan/Hogan_PJM_Energy_Market_022306.pdf)

1 ensure revenue adequacy for power generators. Long-term power purchase agreements are a  
2 mechanism which enables project finance for large capital investments and which can help  
3 mitigate revenue adequacy challenges facing existing power generators.

4 **Q. Can you explain how long-term power purchase agreements provide a hedge against**  
5 **energy price volatility?**

6 **A.** The following chart demonstrates wholesale power prices from 2001 until the middle of  
7 July 2014. The graph line represents the average annual price at the PJM West trading hub, the  
8 predominant wholesale trading hub for Ohio and other parts of PJM.<sup>2</sup>



11 As the graph demonstrates, wholesale energy prices are exceedingly volatile from year to year.  
12 Relying on short-term wholesale prices to set retail electricity rates will subject electricity

<sup>2</sup> Data from the Energy Information Administration. <http://www.eia.gov/electricity/wholesale/index.cfm>

1 consumers to significant price volatility. Long-term power purchase agreements are an effective  
2 mechanism to protect electricity consumers from this phenomenon. As a matter of public policy,  
3 it seems prudent that some part of the energy portfolio should be based on stable, fixed rates to  
4 mitigate potential energy price shocks.

5 **Q. Do you consider long-term contracts to be a “market-mechanism?”**

6 **A.** Yes. In my experience, it appears that electricity sector regulators and policy-makers  
7 have associated “market prices” with short-term or spot market energy prices only. However,  
8 this thinking belies the reality that the long-term cost of capital investments, plus the marginal  
9 cost of fuel, set energy prices over the long-run. As a result, electricity sector regulators and  
10 policy-makers do a potential disservice to electricity customers by focusing only on short-term or  
11 spot market mechanisms in setting prices.

12 Short-term and spot market energy prices result from the short-term or spot market  
13 supply and demand balance for the marginal fuel. This price completely ignores the long-term  
14 cost of a capital investment (as discussed above) and the risks inherent in marginal fuel price  
15 volatility in long-term electricity price formation. Undoubtedly, short-term and spot market  
16 prices can send a “false” signal to electricity sector regulators and policy-makers leading them to  
17 promote market structures which may select energy resources and fuels that, while cost effective  
18 today, will not be so in the future.

19 The best ways to mitigate this risk it to include some competitively sourced, fixed-price,  
20 long-term contracts in the energy portfolio. Comparing fixed, long-term prices over a given term  
21 is the only true apples-to-apples comparison of the true long-term costs of energy. A market  
22 mechanism for comparing the long-term costs of electricity associated both with the cost of  
23 capital investments and fuel price volatility risk does not truly exist in any restructured electricity



1 market to my knowledge. A competitively sourced, fixed-priced, long-term market mechanism  
2 would be a major market innovation which could offer significant price protection for Ohio's  
3 electricity consumers.

4 **Q. Do other long-term risks besides price volatility and potentially rising marginal fuel**  
5 **costs potentially threaten price stability for Ohio's electricity consumers?**

6 **A.** Yes. There are several important U.S. Environmental Protection Agency ("EPA") rules  
7 which could substantially change the mix of electricity resources on which Ohio relies for its  
8 power. The most notable are the Mercury Air Toxics Standard ("MATS") and the Clean Power  
9 Plan ("CPP").

10 **Q. Can you describe the Mercury Air Toxics Standard and its potential impact on Ohio?**

11 **A.** MATS regulate mercury emissions from power plants. According to the U.S. Energy  
12 Information Administration, "between 2012 and 2020, about 60 gigawatts of coal-fired capacity  
13 is projected to retire in the AEO2014 Reference Case, which assumes implementation of the  
14 MATS standards, as well as other laws and regulations."<sup>3</sup> It is conceivable that some of these  
15 retirements will be in Ohio.

16 **Q. Can you describe the Clean Power Plan and its potential impact on Ohio?**

17 **A.** The Clean Power Plan regulates carbon dioxide emissions from coal plants. The Final  
18 Clean Power Plan sets interim targets for carbon dioxide reductions beginning in 2022 and a  
19 final target in 2030. To meet the goals, the EPA recommends that states use three different  
20 "building blocks:" (1) coal-plant efficiency uprates; (2) coal to natural gas conversions; and (3)  
21 renewable energy. States are given maximum flexibility, including using mechanisms not  
22 included in the building blocks, to achieve the targets set by the EPA in the CPP. Among many

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<sup>3</sup> <http://www.eia.gov/todayinenergy/detail.cfm?id=15491>

1 other possibilities, potential relevant implications for Ohio for this testimony include the need for  
2 additional renewable energy investments.

3 **Q. What is the status of the CPP and what are the implications in the current matter?**

4 **A.** Currently, the U.S. Supreme Court has stayed the implementation of the CPP. Given the  
5 results of the recent elections, MAREC believes there is great uncertainty surrounding the CPP  
6 being implemented in its current form. However, MAREC believes that the market has already  
7 and continues to play a major role moving forward in pivoting away from energy resources that  
8 are carbon intensive, like coal generation. MAREC thinks it would be ill-considered for any  
9 provider of standard offer service to rely extensively on such energy resources moving forward  
10 and the provider should develop plans to significantly reduce its carbon footprint. In this matter,  
11 DP&L does not offer any specific plans to do that.

12 **Q. What are the implications of the MATS rules and the need for carbon reduction for**  
13 **the Application?**

14 **A.** These efforts will certainly present a challenge for Ohio's electricity system which should  
15 require DP&L to address additional investments in renewable energy in order to reduce its  
16 carbon footprint and to provide additional replacement energy for any coal units retired under  
17 MATS. The Application does not account for any potential impacts from these environmental  
18 issues facing utilities like DP&L.

19 **Q. Are there any ways in which the Application could be improved?**

20 **A.** Yes. The Application should include competitively sourced, fixed-price, long-term  
21 contracts with renewable generators to match a meaningful portion of the electricity supply  
22 proposed to be contracted by DP&L. MAREC identifies two reasons this is prudent: (1)  
23 renewable energy is the only form of energy which can offer a guaranteed, long-term fixed price

1 because renewable energy, like wind energy, is not subject to fuel price volatility; and (2)  
2 renewable energy sources can effectively offset carbon emissions from DP&L's plants.

3 **Q. Are you suggesting that renewable supply contracts should replace DP&L's**  
4 **generation supply?**

5 **A.** No. MAREC recommends that renewable supply contracts should complement and be in  
6 addition to DP&L's power plants.

7 **Q. Why would long-term power purchase agreements with renewable energy sources**  
8 **improve the Application?**

9 **A.** The renewable supply contracts will provide electricity consumers with competitively  
10 procured, long-term, fixed-priced contracts that will be low cost, will not subject Ohio's  
11 electricity consumers to marginal fuel price volatility, will provide a more diverse fuel source,  
12 and will offset carbon dioxide emissions.

13 **Q. What should be the term and volume of the long-term renewable supply contracts**  
14 **added to the Application?**

15 **A.** The term should be life-of-plant and the volume of renewable energy contracts should be  
16 600 MWs of new wind energy, which would be less than one-fifth of DP&L's affiliated  
17 generation,<sup>4</sup> most of which is coal.<sup>5</sup>

18 **Q. Should there be a "cap" on the maximum price for renewable energy sources**  
19 **procured as part of the Application?**

20 **A.** Yes. Renewable supply contracts should only be engaged in if they are cheaper than the  
21 average, levelized price of DP&L's contracts.

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<sup>4</sup> <http://www.aes.com/news-and-views/press-releases/press-release-details/2014/AES-Retains-DPL-Inc-Generation-Assets/default.aspx>

<sup>5</sup> <http://www.power-eng.com/articles/2014/07/aes-says-it-will-retain-dayton-power-generating-assets.html>

1 **Q. Are there enough renewable resources to cost-effectively achieve MAREC's**  
2 **recommendation?**

3 **A.** Yes. There are currently 11 permitted wind farms in Ohio totaling the potential for 1,334  
4 MWs. Three of these wind farms are under construction totaling 200.8 MW.<sup>6</sup>

5 **Q. To further enhance the economic development benefits of the Application outlined**  
6 **by DP&L can you describe the general economic development benefits of adding**  
7 **approximately 600 MWs of Ohio wind energy to the Application?**

8 **A.** Adding 600 MWs of Ohio wind energy to the Application would have significant local  
9 economic benefits including approximately the following for rural host communities:

- 10 • \$5.4 in annual local tax payments (\$81 million to \$108 million over the projects' lifetime)
- 11 • \$4 million in local landowner payments (\$60 million to \$80 million over the projects'
- 12 lifetime)
- 13 • 1,000 temporary construction jobs
- 14 • 30 to 40 permanent jobs<sup>7</sup>

15 **Q. Is it your contention 600 MWs of wind energy (or other renewables) could be added**  
16 **to the Application for less cost on a levelized per MWh basis, while providing the**  
17 **additional economic development benefits listed above if Ohio wind farms are the source of**  
18 **the renewable energy?**

19 **A.** Yes.

20 **Does this conclude your testimony?**

21 **A.** Yes.

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<sup>6</sup> <http://www.opsb.ohio.gov/opsb/?LinkServID=895FE98C-C363-FCF9-6BFDC7DF3A3F7AA2>

<sup>7</sup> See Attachment A, Iberdrola Renewables, Blue Creek Wind Farm, Fact Sheet.

## CERTIFICATE OF SERVICE

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/s/ Terrence O'Donnell

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## BLUE CREEK Wind Farm



**Project Location:** Tully, Union, and Hoaglin Townships of Van Wert County, Ohio and Benton, Blue Creek, and Latty Townships of Paulding County, Ohio

**Project Status:** Expected on-line in early 2012

**Project Capacity:** 304 Megawatts (MW)

**Number of Wind Turbines:** 152 Gamesa G90, 2.0 MW wind turbines on 100m towers, primarily made in Pennsylvania



**Households Served:** Each turbine can produce up to two megawatts or 2,700 horsepower, which is enough to power about 500 average Ohio houses. The total project will power approximately 76,000 homes annually. According to the 2000 census, there are 11,600 households in Van Wert County and 7,700 households in Paulding County.

**Technology:** The turbines are on a 328 foot (100 meter) tower for a total height of 476 feet. Each nacelle weighs 85 tons. Each foundation uses about 60 truck-loads of concrete and 60 tons of steel rebar.

**Local Economic Benefits:** Approximately \$2 million in annual lease payments to local landowners, \$2.7 million in annual PILOT payments to local taxing bodies, 15-20 new permanent jobs, over 500 construction jobs at peak, and local spending during construction of about \$25 million.

**Energy and Environmental Benefits:** Relative to the rest of Ohio's generation fleet, Blue Creek offsets carbon dioxide emissions by approximately 1.6 billion pounds per year. That is the equivalent to the volume of 158 Ohio Stadiums and the equivalent to planting an estimated 138,000 acres of trees, taking 114,000 cars off the road, or not consuming over 2.1 million barrels of oil. If electric cars were widely available, this project would produce enough electricity to power 479,000 electric cars for a year. It also avoids the consumption of 408 million gallons of water per year.

For more information visit  
[www.iberdrolarenewables.us](http://www.iberdrolarenewables.us)



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Summary: Testimony Direct Testimony of Bruce Burcat on Behalf of The Mid-Atlantic Renewable Energy Coalition electronically filed by Terrence O'Donnell on behalf of Mid-Atlantic Renewable Energy Coalition