

DELMARVA POWER & LIGHT COMPANY

**In the Matter of the Investigation by the
Delaware Public Service Commission
Into Implementation of
Dynamic Pricing**

PSC Docket No. 09-311

Application and Testimony

Before the
Delaware Public Service Commission

March 22, 2011

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE**

**IN THE MATTER OF THE INVESTIGATION)
BY THE DELAWARE PUBLIC SERVICE)
COMMISSION INTO IMPLEMENTATION OF) PSC Docket No. 09-311
DYNAMIC PRICING)**

**DELMARVA POWER & LIGHT COMPANY'S
APPLICATION TO IMPLEMENT AN ADVANCED METERING
ENABLED DYNAMIC PRICING PLAN AND DYNAMIC PRICING RIDER DP**

Delmarva Power & Light Company (“Delmarva” or the “Company”) hereby files this application (“Application”) with the Public Service Commission of the State of Delaware (the “Commission”) seeking approval of a dynamic pricing rate design and tariffs pursuant to 26 Del. C. §§ 201, 1008, 1500 and other applicable authorities. In support of this Application, Delmarva submits the following:

Applicant

1. Delmarva is a Delaware corporation with its principal place of business located at 401 Eagle Run Road, Newark, Delaware 19702. Delmarva is a wholly owned subsidiary of Pepco Holdings, Inc. (PHI), a Delaware corporation.

Need For Dynamic Pricing Rate Design

2. On August 4, 2009, the Delaware Public Service Commission issued Order No. 7620 which opened PSC Docket No. 09-311 the purpose of which was to further investigate the benefits to ratepayers of dynamic pricing and other options that may become available with the diffusion of AMI. The order also provided for a procedural schedule which included workshops for the purpose of the exchange of ideas regarding dynamic pricing. The workshop process culminated in a consensus report addressing dynamic pricing that was filed on November 30,

2009. The consensus report was filed by Delmarva, Commission Staff, Division of the Public Advocate, Retail Energy Supply Association, Delaware Energy Users Group and Constellation Energy. The consensus report was discussed at the Commission meeting on December 22, 2009. The Company stated at that time its intent to file a dynamic pricing proposal. The concepts discussed during that process are the basis of the Company's proposal presented in this application and testimony.

3. Delaware is currently confronted by a number of energy issues, including but not limited to increased prices due to constrained capacity. This capacity constraint that is approached or exceeded for a few hours a year increases prices for all other hours of the year, resulting in higher prices for Delaware consumers. Delmarva is also among the national leaders with regards to deployment of an Advanced Meter Infrastructure ("AMI") system, which has the potential to empower customers across the state to take greater control over their electricity usage if the correct incentives are given. Additionally, state and federal environmental concerns likely would complicate and potentially preclude any major new conventional base load generation in the area.

4. Delaware's Energy Conservation & Efficiency Act of 2009 ("Energy Efficiency Act")¹ requires significant reductions in both electricity consumption and demand. Dynamic pricing rate options can provide a significant contribution to meeting this goal. The availability of detailed energy use data will permit the Company to establish new rate options that provide more accurate energy price signals to customers. The dynamic pricing that Delmarva is proposing is designed to give customers incentives to reduce consumption during times when costs of producing and supplying electricity is highest. The availability of AMI enabled detailed

¹ This legislation requires each "Affected Electric Energy Provider" to achieve energy and peak demand savings that is equivalent to 2% of the provider's 2007 electricity consumption and to achieve non-coincident provider peak demands to 2% of the provider's 2007 peak demand by 2011, increasing to 15% by 2015.

energy use information to Delmarva's electricity customers is expected to assist customers in reducing their annual energy consumption. These resulting energy reductions are one component of the Company's efforts to achieve the energy reduction goals established through the Energy Efficiency Act. As such, Delmarva seeks, through this application and supporting materials, authority to implement a dynamic pricing rate design.

5. Dynamic Pricing provides incentives to customers to reduce energy use during peak hours, which saves money directly for those customers and reduces average costs for all customers in the region for electricity generation. Peak demand reduction reduces the number of hours that expensive generation is required to operate, reduces the need for ancillary services, and may defer the need for construction of additional peaking plants and transmission facilities.

6. For customers who actively participate in dynamic pricing programs, many will see lower bills compared to standard pricing. Customers who learn how to reduce energy during peak periods, such as critical peak periods, will often apply that same knowledge to use energy more efficiently, resulting in lower emissions and again, lower average costs, all other things being equal. Dynamic pricing is one path to encourage customers to manage their energy use and provides an opportunity for Delmarva to partner with customers to use energy wisely.

Summary of Application

7. By this Application, Delmarva seeks approval of a proposed Dynamic Pricing Rider DP and Delmarva's currently proposed phase-in timeline for implementing dynamic pricing for all Delmarva customers served under Standard Offer Service ("SOS") rates.

8. As explained by Company Witness Janocha, the Company is seeking to establish a Dynamic Pricing Rider DP which is a Rider to the residential and small and medium commercial schedules listed in the "Applicability" paragraph. The Rider DP modifies the SOS

Generation portion of the bill by specifying Critical Peak Pricing (“CPR”) as the default pricing structure. The CPR pricing structure is designed to give customers strong incentives to reduce consumption during the times when the cost of producing electricity is highest.

9. The testimony of Gary Stockbridge describes the Company’s proposed implementation timeline. Implementation would begin for 7,000 residential customers who participated in the Advanced Meter Infrastructure (“AMI”) Field Acceptance Test (“FAT”) for SOS in June 2012. These customers will be defaulted to the Dynamic Pricing Rider DP, which is based on a critical peak rebate pricing plan, one form of dynamic pricing. The remainder of Delmarva’s residential customers will be moved to Rider DP in 2013. An estimated 800 small and 200 medium non-residential FAT customers will be placed under this rider in 2013 and in 2014 the remaining small and medium Delmarva non-residential customers will be defaulted to the rate.

Minimum Filing Requirements (MFR)

10. The Company’s Application includes the Commission’s Minimum Filing Requirements (MFR) (Order No. 5410 – PSC Reg. Docket No. 4). Delmarva requests that in the initial order opening this proceeding, the Commission waive all sections of the MFR for base rate increases, with the exception of Part I. C. regarding the filing of testimony and supporting exhibits to be filed coincident with the application.

Notice

11. Notice of this filing will be given through bill inserts, as well as through notices published in The News Journal and the Delaware State News. A proposed form of public notice and Commission order is attached to this Application.

Witnesses

12. The proposed phase-in timeline and proposed Rider DP described in this Application are supported by the direct testimony and schedules of the following witnesses for the Company, each of which is attached and made a part hereof:

- i. Gary Stockbridge – Policy and Program Overview
- ii. Karen R. Lefkowitz – Implementation and fit with AMI and Smart Grid
- iii. Charles R. Dickerson – Customer Education
- iv. Joseph F. Janocha – Dynamic Pricing Rate Design
- v. Stephen L. Sunderhauf – Structure, Implementation and Benefits of Dynamic Pricing

Communications

13. All communications and notices with respect to this proceeding should be made to the following individuals:

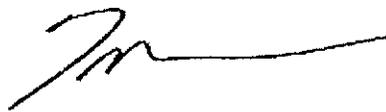
| | |
|--|---|
| <p>Heather G. Hall</p> <p>(by U.S. Mail) Delmarva Power Regulatory Affairs P.O. Box 9239 Newark, DE 19714-9239</p> <p>(by courier) Delmarva Power Regulatory Affairs 401 Eagle Run Road Newark, DE 19702</p> <p>e-mail addresses: heather.hall@pepcoholdings.com</p> | <p>Todd L. Goodman</p> <p>((by U.S. Mail) Delmarva Power Regulatory Affairs P.O. Box 9239 Newark, DE 19714-9239</p> <p>(by courier) Delmarva Power Regulatory Affairs 401 Eagle Run Road Newark, DE 19702</p> <p>Counsel for Delmarva Power</p> <p>e-mail addresses: todd.goodman@pepcoholdings.com</p> |
|--|---|

WHEREFORE, Delmarva respectfully requests that the Commission:

- A. grant the proposed changes as filed by Delmarva effective June 1, 2012;
- B. order that a notice of hearing be published.

Respectfully submitted,

By:



/s/ _____
Todd L. Goodman
Counsel for
Delmarva Power & Light Company
800 King Street, 5th Fl
Wilmington, DE 19801
todd.goodman@pepcoholdings.com

March 22, 2011

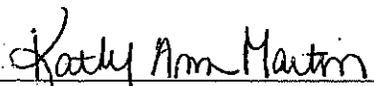
STATE OF DELAWARE)
) SS.
COUNTY OF NEW CASTLE)

On this day March 22, 2010, personally came before me, the subscriber, a Notary Public in and for the state and county aforesaid Gary R. Stockbridge, Vice President, an officer of Delmarva Power & Light Company, a corporation existing under the laws of the State of Delaware, party to this Application, known to me personally to be such, and acknowledged this Application to be his act and deed and the act and deed of such corporation, that the signature of such Vice President is in his own proper handwriting, and that the facts set forth in this Application are true and correct to the best of his knowledge and belief.



Gary R. Stockbridge
Vice President

SWORN TO AND SUBSCRIBED before me this March 22, 2010.



Kathy Ann Martin
Notary Public

My Commission expires: 2/1/2015

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE**

**IN THE MATTER OF THE APPLICATION OF)
DELMARVA POWER & LIGHT COMPANY TO)
TO IMPLEMENT AN ADVANCED METERING) PSC Docket No. 09-311
ENABLED DYNAMIC PRICING PLAN)**

PUBLIC NOTICE OF FILING

**TO: ALL ELECTRIC CUSTOMERS OF DELMARVA POWER & LIGHT
COMPANY**

On March 22, 2011, Delmarva Power & Light Company filed an Application with the Delaware Public Service Commission ("Commission"). The Application requested approval of a proposed Dynamic Pricing Rider DP and Delmarva's currently proposed phase-in timeline for implementing dynamic pricing for all Delmarva customers served under SOS rates.

Any person or group wishing to participate formally as a party in this docket (PSC Docket No. 09-311), with the right to submit evidence and to be represented by counsel must, in accordance with Rule 11, petition the Commission for and be granted leave to intervene in the proceedings in this docket by the Hearing Examiner. To be timely, all such petitions must be filed with the Delaware Public Service Commission at 861 Silver Lake Boulevard, Suite 100, Cannon Building, Dover, Delaware 19904 on or before _____, 2011. Petitions received thereafter will not be considered except for good cause shown.

The Hearing Examiner will consider the Application, including any settlement that might be reached by the parties to the proceeding, in hearings to be held at the times and locations to be determined by the Hearing Examiner.

Copies of the Application, testimony and attachments will be available for public inspection at the Commission's Dover office at the above address, or, by appointment, in the Division of the Public Advocate located on the 4th Floor, Carvel State Office Building, 820 North French Street, Wilmington. Please call for an appointment at (302) 577-5077.

Individuals with disabilities who wish to participate in these proceedings or to review these filings may contact the Commission to discuss any auxiliary aids or services needed to facilitate such review or participation. Such contact may be in person, by writing, telephonically, by use of the Telecommunications Relay Service, or otherwise. The Commission Staff is available for questions concerning this Application and other documents. The Commission's toll-free telephone number within Delaware is 1-800-282-8574. The Commission can also be reached at (302) 739-4333 and that number should also be used for Text Telephone ("TT") calls. Inquiries can also be sent to the Commission by Internet e-mail to "[insert Staff name]@state.de.us."

1 DELMARVA POWER & LIGHT COMPANY
2 TESTIMONY OF GARY R. STOCKBRIDGE
3 BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION
4 IN THE MATTER OF THE INVESTIGATION BY THE
5 DELAWARE PUBLIC SERVICE COMMISSION
6 INTO IMPLEMENTATION OF DYNAMIC PRICING
7 DOCKET NO. 09-311

8 **1. Q: Please state your name, position and business address.**

9 A: My name is Gary R. Stockbridge. I am President, Delmarva Power
10 Region for Pepco Holdings, Inc., (“PHI”), located at P.O. Box 9239, Newark, DE
11 19714. I am testifying in this proceeding on behalf of Delmarva Power & Light
12 Company (“Delmarva Power” or “the Company”).

13 **2. Q: What are your responsibilities in your role as President, Delmarva Power**
14 **Region for PHI?**

15 A: I am responsible for governmental and other external relations in
16 Delmarva Power’s Delaware and Maryland service territories, and Delmarva’s
17 participation in the communities we serve. My responsibilities also include
18 establishing and maintaining strong ties with our States and local communities,
19 including corporate giving activities. I am a liaison and advocate on behalf of the
20 customers and communities that Delmarva Power serves, and am accountable for
21 ensuring the resolution of issues and concerns in the Delmarva region.

22 **3. Q: Could you please describe your educational and professional background**
23 **and experience?**

24 A: I hold a Bachelor of Science degree in Mechanical Engineering from
25 Drexel University (1984) and a Masters degree in Business from Drexel

1 University (2004). I have been working in the utility industry for over 27
2 years. I began my career with the Philadelphia Electric Company (“PECO”) in
3 1982. At PECO I worked in gas operations, marketing, and finance, in positions
4 of increasing responsibility. I left PECO holding the position of Vice President of
5 PECO’s unregulated affiliate “Horizon Energy,” responsible for selling natural
6 gas and electricity at retail in the restructured energy markets in the Mid-Atlantic
7 Region. I began my career with Delmarva Power in 1997, shortly before its
8 merger with Atlantic City Electric to form Conectiv. At the newly combined
9 company, I was initially responsible for its competitive retail energy business
10 until 2000. I then moved into the regulated power delivery business as Vice
11 President of Customer Care, remaining in that position when Conectiv merged
12 with Potomac Electric Power Company (“Pepco”) to form PHI in 2002. I became
13 President of the Delmarva Power Region of PHI in 2005.

14 **4. Q: What is the purpose of your testimony?**

15 **A:** I am the policy witness and will provide support for the Company’s
16 Application to implement an Advanced Metering Infrastructure (“AMI”) enabled
17 dynamic pricing plan and the reasons why the Company proposes this plan. I will
18 provide an overview of the Company’s filing and will briefly summarize the
19 testimony of other Company Witnesses supporting the Application.

20 This testimony was prepared by me or under my direct supervision and
21 control. The source documents for my testimony are Company records, public
22 documents, and my personal knowledge and experience.

23

24

1 **5. Q: What Commission approvals is the Company requesting?**

2 **A:** Delmarva Power is seeking Commission approval of the following items
3 at this time: 1) Delmarva Power's proposed dynamic pricing Rider DP; and 2)
4 Delmarva Power's currently proposed phase-in timeline for implementing
5 dynamic pricing.

6 **6. Q: What are the energy issues confronting Delaware?**

7 **A:** Delaware is currently confronted by a number of energy issues, including
8 high prices. These are driven in large part by the capacity constrained nature of
9 the Eastern MAAC PJM zone in which Delaware resides. This capacity constraint
10 that is approached or exceeded for a few hours a year increases prices for all other
11 hours of the year, resulting in higher prices to Delaware consumers. Delmarva is
12 also among the national leaders with regards to the deployment of the AMI
13 system, which has the potential to empower customers across the state to take
14 greater control over their electricity usage if the correct incentives are given.
15 Finally, state and federal environmental concerns likely preclude major new
16 conventional generation in the area, and the approval of offshore wind points
17 towards a future where intermittent renewables will account for a larger
18 proportion of the state's electricity portfolio. The availability of additional
19 demand response resources, such as AMI enabled dynamic pricing of electricity,
20 helps to address each of these Delaware energy issues, including the integration of
21 additional renewable generation resources that may not be available during
22 periods of high electricity demand.

23

24

1 **7. Q: What steps have Delaware policymakers taken to address these issues?**

2 **A:** Delaware's Energy Conservation & Efficiency Act of 2009 ("Energy
3 Efficiency Act")¹ requires significant reductions in both electricity consumption
4 and demand. Dynamic pricing rate options can provide a significant contribution
5 to meeting this goal. The availability of detailed energy use data permits the
6 Company to establish new rate options that provide more accurate energy price
7 signals to customers. The dynamic pricing that Delmarva is proposing is
8 designed to give customers incentives to reduce consumption during times when
9 costs of producing and supplying electricity is highest. The availability of AMI-
10 enabled detailed energy use information to Delmarva Power's electricity
11 customers is expected to assist customers in reducing their annual energy
12 consumption. These resulting energy reductions are one component of the
13 Company's efforts to achieve the energy reduction goals established through the
14 Energy Efficiency Act.

15 **8. Q: What technology is Delmarva Power using to address these issues?**

16 **A:** The Delaware Commission approved Delmarva Power's deployment of an
17 AMI System pursuant to Commission Order No. 7420, issued on September 16,
18 2008, in Docket No. 07-28. Delmarva Power is currently installing and has
19 almost completed an AMI System in its Delaware service territory. After the
20 deployment of the system is completed and tested, Delmarva Power will be able
21 to collect and provide to its electricity customers hourly energy use data on a daily
22 basis. The Company has been meeting with representatives from Commission

¹ This legislation requires each "Affected Electric Energy Provider" to achieve energy and peak demand savings that is equivalent to 2% of the provider's 2007 electricity consumption and to achieve non-coincident provider peak demands to 2% of the provider's 2007 peak demand by 2011, increasing to 15% by 2015.

1 Staff and the Division of the Public Advocate on a routine basis to provide
2 updates and information on the AMI deployment process.

3 **9. Q: Can you describe what is meant by the term AMI enabled dynamic pricing?**

4 **A:** Dynamic pricing refers to charging customers for the use of electricity
5 based on factors that change over the course of hours or days, such as the demand
6 for electricity, weather, or the availability of transmission or distribution facilities
7 to transmit or deliver the electricity to customers. Some examples of dynamic
8 pricing are:

- 9 • Hourly pricing - where the price of electricity varies hour-to-hour
- 10 • Critical peak pricing – where during critical peak periods a significantly
11 higher price is charged offset by a discount price during other hours
- 12 • Critical peak rebate – where customers may earn rebates by reducing
13 electricity use during critical peak periods but face no risk of paying a higher
14 bill compared to standard pricing

15 One of the goals of dynamic pricing in its various forms is to create a link
16 between cost and retail pricing so that customers will avoid using electricity that
17 is more costly to produce and shift electricity use to time periods when it is less
18 costly to produce, thereby saving customers money.

19 Delmarva Power’s installation of AMI provides a platform to offer dynamic
20 pricing and the ability to measure *when* Customers use energy as well as the
21 *quantity* of electricity used. In addition, AMI provides more timely feedback to
22 Customers because the measurements of hourly or 15 minutes energy usage are
23 transmitted to the Company daily. These two features of AMI together allow the
24 Company to offer Customers the benefits of dynamic pricing and additional

1 benefits that directly relate to the Company being able to provide information on
2 energy use everyday, rather than in a bill at the end of each billing period.

3 **10. Q: What are the benefits of dynamic pricing?**

4 A: Dynamic pricing provides incentives to Customers to reduce energy use
5 during peak hours which saves money directly for those customers and which
6 reduces the average costs for all Customers in the region for electricity
7 generation. Peak demand reduction reduces the number of hours that expensive
8 generation is required to operate, reduces the need for ancillary services, and may
9 defer the need for construction of additional peaking plants and transmission
10 facilities. In addition, some plants are only run if absolutely necessary to meet
11 peak demand because of the higher level of emissions of carbon and other
12 pollutants - reducing the number of hours those plants need to run will benefit the
13 environment. Line losses are also higher during periods of peak demand, so
14 reducing energy use during periods of high demand also reduces line losses,
15 further reducing average costs.

16 For Customers who actively participate in dynamic pricing programs,
17 many will see lower bills compared to standard pricing. Customers who learn
18 how to reduce energy during peak periods, such as critical peak periods, will often
19 apply that same knowledge to use energy more efficiently, resulting in lower
20 emissions and again, lower average costs, all other things being equal. Dynamic
21 pricing is one path to encourage Customers to manage their energy use and
22 provides an opportunity for Delmarva Power to partner with Customers to use
23 energy wisely.

24

1 **11. Q: What experience does the Company have with dynamic pricing?**

2 **A:** In the District of Columbia, PHI worked as part of a consortium of
3 stakeholders to pilot AMI enabled Dynamic Pricing. This pilot was highly
4 successful, and demonstrates the capability of the Company to design and
5 implement a successful program. Mr. Dickerson will discuss the Smart Meter
6 Pilot Program, Inc. at greater length. In addition, Delmarva Power draws on the
7 lessons, experiences, and best practices of utilities across the country

8 **12. Q: Has this Commission previously investigated the concept of dynamic pricing?**

9 **A:** Yes, it has. On August 4, 2009, the Delaware Public Service Commission
10 issued Order No. 7620 which opened PSC Docket No. 09-311. This order states:

11 That this docket is hereby opened to further
12 investigate the benefits to ratepayers of
13 dynamic pricing and other options that may
14 become available with the diffusion of AMI.

15
16 This Order also provided for a procedural schedule which included
17 workshops for the purpose of the exchange of ideas regarding Dynamic Pricing.
18 The workshop process culminated in a consensus report addressing dynamic
19 pricing that was filed on November 30, 2009. The consensus report was filed by
20 Delmarva, Commission Staff, Division of the Public Advocate, Retail Energy
21 Supply Association, Delaware Energy Users Group and Constellation Energy.
22 The consensus report was discussed at the Commission meeting on December 22,
23 2009. The Company stated at that time its intent to file a Dynamic Pricing
24 proposal. The concepts discussed during that process are the basis of the
25 Company's proposal presented in this filing.

26

1 **13. Q: Please describe the Company's proposed timing of the implementation of**
2 **dynamic pricing.**

3 A: Delmarva Power proposes to phase-in the implementation of dynamic
4 pricing for all Delmarva Power customers served under SOS rates. The phase-in
5 of these rates will permit the Company to verify billing system calculations, refine
6 internal operational procedures and thoroughly test customer education materials.

7 Beginning in June 2012, an initial group of approximately 7,000 SOS
8 Field Acceptance Test participants will be served under Rider DP. Beginning in
9 2013, all Delmarva Power residential SOS customers will be served under Rider
10 DP.

11 Beginning in June 2013, an initial group of 800 small
12 commercial/industrial non-residential SOS Field Acceptance Test participants and
13 200 medium commercial /industrial SOS Field Acceptance Test participants will
14 be served under Rider DP. Beginning in 2014, all Delmarva Power non-
15 residential SOS customers will be served under Rider DP.

16 **14. Q: What role does customer education play in the successful implementation of**
17 **the Company's dynamic pricing program?.**

18 A: There was substantial discussion at the December 22, 2009 Commission
19 meeting about the importance of customer education in this process. The
20 Company recognizes that providing our customers with the tools and information
21 necessary to actively participate in the dynamic pricing program is essential to the
22 success of this program. As discussed in Mr. Dickerson's testimony, the
23 Company has developed a plan for a comprehensive education and customer
24 engagement plan to support the successful implementation of the proposed

1 dynamic pricing program. It is our belief that the implementation of the plan, as
2 outlined in Mr. Dickerson's testimony will provide our customers with the tools
3 necessary to actively participate in the dynamic pricing program. Delmarva plans
4 to file separate testimony during the second quarter of 2011 that will propose the
5 introduction of a new residential direct load control program for central air
6 conditioners and central electric heat pumps. The new direct load control
7 program will permit residential customers to select either a smart programmable
8 thermostat or a new outdoor cycling switch. This program will permit customers
9 to have their electricity use during high load periods automatically reduced by
10 Delmarva.

11 **15. Q: Please describe elements of Company testimony that are presented in this**
12 **Application.**

13 **A:** There are four other Company Witnesses presenting testimony in support
14 of the Company's Application as follows:

- 15 – Ms. Karen R. Lefkowitz, Vice President, Business Transformation will
16 present information on the timing of implementation and describe how
17 dynamic pricing fits into the overall picture with AMI and the Smart Grid.
- 18 – Mr. Charles R. Dickerson, Vice President, Customer Care, will provide
19 information on the importance of customer education in the context of
20 dynamic pricing, will outline the anticipated customer education elements,
21 and describe the benefits of dynamic pricing from a customer perspective.
- 22 – Mr. Joseph Janocha, Manager, Rate Economics for Delmarva Power &
23 Light Company, will discuss the dynamic pricing rate design and discuss

1 potential rate impacts. Company Witness Janocha will also sponsor the
2 proposed dynamic pricing tariff.

3 – Mr. Stephen L. Sunderhauf, Manager, Program Design & Evaluation, will
4 provide testimony on the dynamic pricing program description and the
5 technical aspects of implementing the program.

6 **16. Q: Does this conclude your testimony?**

7 **A:** Yes, it does.

**Direct Testimony of
Karen R. Lefkowitz**

1 DELMARVA POWER & LIGHT COMPANY
2 TESTIMONY OF KAREN R. LEFKOWITZ
3 BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION
4 IN THE MATTER OF THE INVESTIGATION BY THE
5 DELAWARE PUBLIC SERVICE COMMISSION
6 INTO IMPLEMENTATION OF DYNAMIC PRICING
7 DOCKET NO. 09-311

8 **1. Q: Please state your name, position and business address.**

9 A: My name is Karen R. Lefkowitz. I am Vice President, Business
10 Transformation for Pepco Holdings, Inc., (“PHI”). I am testifying in this
11 proceeding on behalf of Delmarva Power & Light Company (“Delmarva” or the
12 “Company”). My business address is Edison Place, 701 9th St., N.W.,
13 Washington, D.C 20068-0001.

14 **2. Q: What are your responsibilities in your role as Vice President, Business**
15 **Transformation for PHI?**

16 A: I am responsible for the system planning, design, and implementation
17 efforts associated with the Blueprint for the Future for PHI subsidiaries Delmarva,
18 Potomac Electric Power Company (“Pepco”), and Atlantic City Electric Company
19 (“ACE”). My responsibilities include managing the modifications to the business
20 processes necessary to obtain the benefits from the implementation of Advanced
21 Metering Infrastructure (“AMI”) and the introduction of dynamic pricing.

22 **3. Q: Could you please describe your educational and professional background**
23 **and experience?**

24 A: I received a Bachelor of Arts degree in Business Administration from
25 George Washington University in 1977, and a Masters of Business

1 Administration from Marymount University in 1988. I have been working in the
2 utility industry for over 30 years. I began my career with Pepco in 1979.

3 **4. Q: What is the purpose of your testimony?**

4 **A:** The purpose of my testimony is to describe the technologies and business
5 processes required to implement dynamic pricing. I will also explain the expected
6 efforts required to activate, test and validate these technologies and processes.

7 This testimony was prepared by me or under my direct supervision and
8 control. The source documents for my testimony are Company records, public
9 documents, and my personal knowledge and experience.

10 **5. Q: Please explain the expected timing of activating the technologies and**
11 **processes.**

12 **A:** As of Febtuary 28, 2011, the Company had installed approximately
13 245,000 AMI meters or about 80% of the entire population of electric meters.
14 The Company expects to complete the installation and activation of the electric
15 meters by the third quarter of 2011. As described in Mr. Stockbridge's testimony,
16 starting with the first quarter of 2012, the Company will begin the process of
17 moving several thousand customers to Rider DP.

18 Delmarva expects to complete the software systems integration work by
19 the third quarter of 2011, which will enable the Company to begin the customer
20 introduction to dynamic pricing. The Company will begin the education process
21 for the initial customers selected to be placed on the rate in 2012. We will also
22 invite customers to set their notification preferences for critical peak events. This
23 will permit Delmarva to begin calling critical peak events, to notify customers of

1 each event on the prior day, to post information on the “My Account” web portal,
2 and to bill customers on dynamic pricing Rider DP during the summer of 2012.

3 **6. Q: Please describe the technologies that support dynamic pricing business**
4 **processes?**

5 **A:** AMI is comprised of three fundamental systems: “smart meters”; a
6 communication network; and an information technology application (“AMI head-
7 end system”) that controls meters and the communications network. The meters
8 are used to record intervals of electricity usage, typically hourly, and transmits the
9 data on a regularly scheduled basis every day (as programmed in the head-end
10 system), using the Company’s communication network.

11 The AMI head-end system is integrated with a Meter Data Management
12 System (“MDMS”) which performs validation of the interval data and enables
13 estimation and editing of the data, if required. The MDMS also calculates the
14 baseline electricity usage for each customer based on the customer’s own
15 historical usage. The MDMS provides the “My Account” web portal information
16 for each customer for each critical peak event the following details: event usage,
17 baseline usage, and energy reduction, if any. This set of information is available
18 for the customer via the “My Account” web portal, along with the preliminary
19 rebate earned by the household for each event.

20 The MDMS is also integrated with the Company’s Customer Information
21 System (“C3”). At the time of monthly billing, the MDMS provides the
22 aggregated interval usage for the critical peak and other time periods during the
23 month to the C3. The C3 then computes the billable amount by multiplying the

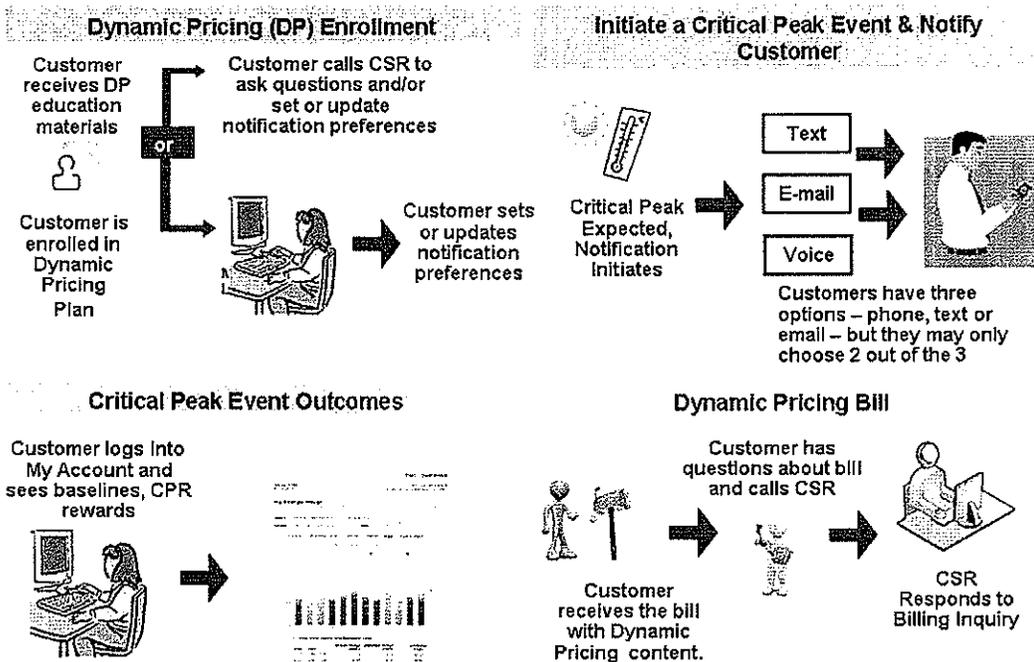
1 aggregated usage data from the MDMS by the applicable regular or dynamic
2 pricing rate.

3 The Company is changing the bill format to provide the same information
4 for each critical peak event that is presented on the “My Account” web portal on
5 the monthly bill, along with the regular billing information. This daily usage
6 graph is expected to be available on the customer’s bill by the second quarter
7 2012 and complements the existing 13 month consumption graph. The
8 Company’s customer service representatives and energy advisors will have access
9 to the same information that is provided to the customer to be able to assist with
10 customer inquiries.

11 **7. Q: Please describe the business processes that will be supported to enable the**
12 **dynamic pricing.**

13 **A:** The business processes required to deliver the dynamic pricing plan to the
14 Company’s customers are depicted in Figure 1 below:

Figure 1



2

3

The business processes from the customer perspective for dynamic pricing begin with educational materials being provided to the customer. Mr. Dickerson’s testimony describes the Company’s customer education plans in detail. Shortly after receiving the educational materials, the customer will be defaulted to the dynamic pricing Rider DP. The customer will be invited to select how they wish to be notified of critical peak events from among three options: telephone, email or text. The event notifications are typically sent the afternoon or evening prior to the critical peak day. By logging into the “My Account” web portal on the day after a critical peak event, each customer will be able to see the rebate their household earned during the previous day’s event and how much they

4

5

6

7

8

9

10

11

12

1 reduced their energy usage. The rebates earned by the customer household for all
2 events during the billing period will be credited to the customer on their next
3 monthly bill. That same information will be available from a Customer Service
4 Representative if a customer wants to call in rather than viewing on the internet.

5 The Company modified its existing "My Account" web portal and back
6 office systems to allow customers to provide or change their notification
7 preferences for critical peak events. To facilitate the outbound customer
8 notification process, the Company will use its services-oriented architecture to
9 trigger the outbound critical peak event notification messaging to customers using
10 a vendor-provided messaging service. The messages for each customer are stored
11 in a database that is accessible by customer service representatives using an
12 internal portal, ensuring that the representatives know exactly what was sent to
13 the customer in the event the customer calls with questions.

14 In addition to using "My Account" to view their own electricity usage
15 outcome for the critical peak event, the customer will also be able to see their
16 historical usage, and to perform various analyses to help them to understand their
17 usage patterns and methods to reduce energy usage. The Company has added a
18 load analysis module to its existing web site to create this capability.

19 **8. Q: Please describe how customers without internet access will be able to actively**
20 **participate in the dynamic pricing program?**

21 **A:** As part of the education process, discussed in Mr. Dickerson's testimony,
22 customers without internet access will have the option of being notified of critical
23 peak events either by telephone or text. If the customer does not have access to

1 "My Account" that same information will be available from a Customer Service
2 Representative.

3 The Company's goal is to provide the opportunity for all of its customers
4 to actively participate in the dynamic pricing program to the extent they desire to
5 do so. The options being put in place by the Company, as described above, will
6 afford all of our customers taking service under Rider DP with the opportunity for
7 full participation in the dynamic pricing program regardless of their ability to
8 access the internet.

9 **9. Q: Please explain the training that the Company will undertake to prepare the**
10 **Company employees to use the new business processes for dynamic pricing.**

11 **A:** Delmarva will hold workshops for employees to first learn about the new
12 business processes and then role play using the new business processes. All
13 employees in business units affected by the new business processes will undergo
14 training. The first employees in each business unit to undergo training and role
15 playing will be key employees that are leaders in their business unit.
16 Management will rely on these key employees to assist their co-workers in
17 adapting to the new business processes.

18 Where possible, Delmarva will include employees that live in Delaware,
19 including executives, as part of the first customers to be defaulted to the DP Rider
20 and to encourage the employees and executives to actively participate in critical
21 peak events. The personal experience gained from setting up notifications for
22 events, using the educational material provided by Delmarva to learn how to
23 reduce energy use during events, reviewing their performance during the events

1 on the “My Account” web portal, and reviewing their bills will prove invaluable
2 to executives and employees to fully adopt and understand the new business
3 processes, as well as provide us with direct feedback regarding any recommended
4 process improvements.

5 **10. Q: What steps is Delmarva taking to ensure that the systems necessary to**
6 **implement dynamic pricing perform as intended?**

7 **A:** The changes to the back office systems and business processes are
8 extensive as we prepare to offer dynamic pricing. In order to offer dynamic
9 pricing to customers, the Company has deployed the Advanced Metering
10 Infrastructure, head-end and MDMS systems, and the communications system
11 required to capture the detailed electricity usage data from AMI, enhanced the
12 information exchange between systems, and made major modifications to the C3
13 system and the “My Account” web portal. Delmarva has undertaken a rigorous
14 systems testing and validation program to ensure the integrity of these
15 technologies and processes. These work efforts, while extensive, will allow
16 Delmarva to provide customers with timely information on their performance
17 during critical peak events, provide detailed electricity usage information on their
18 bills, as well as a variety of other useful information regarding potential energy
19 saving practices and measures for the customer.

20 IBM is assisting Delmarva with the systems integration work. IBM has
21 experience with designing, building and testing these types of complex system
22 architectures with other utilities in California and Texas. During 2009, Delmarva,
23 conducted a field acceptance test ("FAT") of the AMI system in the State of

1 Delaware. Enspira Solutions, LLC ("Enspira") was engaged by Delmarva to
2 assist with the FAT.

3 Delmarva had two primary objectives in its field acceptance test of AMI:

4 1. To verify the ability of the Silver Springs Network ("SSN") AMI
5 system to achieve the technical, functional, performance, information, and
6 commercial specifications defined in the Delmarva SSN contract; and

7 2. To validate the ability of the SSN AMI system to enable the
8 achievement of the benefits identified in the Delmarva AMI business case.

9 Between April 2009 and July 2009, Delmarva installed 7,146 AMI
10 Electric Meters, 525 Gas Interface Management Units (IMUs), ten Access Points
11 (APs) and 25 AMI Signal Repeaters in two primary sites in Delaware, one in New
12 Castle County and one in Kent County. The sites were chosen in order to assess
13 the system's performance in urban, suburban and rural environments. Delmarva,
14 SSN, and Enspira worked together to develop the AMI System Acceptance
15 Testing Process, a comprehensive set of procedures, measures, logs and
16 documentation.

17 In July 2009, following the installation of the equipment and tuning of the
18 AMI communication network, Delmarva began execution of the AMI System
19 Acceptance Testing Process. Delmarva concluded the testing in November, 2009
20 and determined that the results of the FAT were acceptable and the objectives
21 were met, thus leading to a recommendation to Delmarva's executive leadership
22 team to move forward with implementation of the AMI.

1 The communication network design and equipment was provided by SSN
2 and installed by Delmarva personnel after they were trained by SSN. SSN
3 observed the installations of all the communication equipment to ensure proper
4 installation.

5 Delmarva contracted with General Electric (GE) and Landis + Gyr (L+G)
6 for the electric meters. Prior to authorizing GE and L+G to manufacture the
7 meters, Delmarva conducted its standard first article testing for the electric
8 meters. These tests included verification that the proper meter program was
9 installed, that the meter was recording usage accurately at full and light loads, that
10 the SSN Network Interface Card (“NIC”) could be communicated to properly and
11 that the remote disconnect switch opened and closed as expected. After passing
12 the first article testing, Delmarva then authorized GE and L+G to manufacture the
13 meters. Once GE and L+G manufacture the meters they conduct their own testing
14 prior to shipment to Delmarva.

15 As a further control for the FAT, Delmarva tested every meter procured
16 and installed. Delmarva conducted the tests on 100% of the meters at its own
17 facilities in Forestville, Maryland and Newark, Delaware (polyphase meters only).
18 Delmarva also sent 500 L+G and 250 GE single phase meters to a third party for
19 testing. The third party performed the same tests that Delmarva did and in
20 addition pulled a sample of meters from each manufacturer and conducted the
21 following additional tests:

- 22 • Static discharge;

- 1 • Opening and closing of the remote disconnect switch 10,000 times at
- 2 100 amps of load;
- 3 • Accuracy testing under load at a range of ambient temperatures from -
- 4 20 degrees to +50 degrees Celsius at 100 amps of load; and
- 5 • Internal heat rise test at 200 amps of load

6 The meters passed this round of testing. The results and accuracy requirements
7 are below:

- 8 • Weighted average accuracy of AMI meters tested by Delmarva - 100.01
- 9 • Weighted average accuracy of AMI meters tested by the meter vendors at
- 10 the factory - 99.99%
- 11 • The Public Service Commissions that regulate Delmarva's meters each
- 12 have accuracy requirements that allow for a range of 98% - 102% before
- 13 an electric meter is considered Out of Tolerance
- 14 • Manufacturer standard accuracy requirements for GE and L+G are 99.5%
- 15 - 100.5%
- 16 • Delmarva contract accuracy requirements for GE and L+G are 99.7% -
- 17 100.3%

18 After the FAT, Delmarva contracted with another independent third party
19 testing company to conduct a series of tests designed to verify compliance of the
20 GE and L+G watt hour meters with the limits of ANSI C12.1-2001 for Electric
21 Meters, Code for Electricity Meters and C12.20-2002 for Electricity Meters - 0.2
22 and 0.5 Accuracy Classes. The meters conformed to the tests.

1 In addition, Delmarva performed comprehensive testing of the
2 applications, enterprise service bus and interfaces that integrate the UtilityIQ
3 system into the billing system used at Delmarva. IBM worked with Delmarva's
4 IT team to develop a master testing strategy and plan that was comprised of
5 integration, system and performance testing phases. Test scenarios and scripts
6 were created and executed to verify the proper operation of the systems. Issues
7 that were identified were tracked, evaluated and resolved. Part of this testing
8 included taking actual data recorded in the FAT meters and using it in the test
9 scenarios. Users of the systems were given training as needed for their roles.

10 **11. Q: Does this conclude your testimony?**

11 **A:** Yes, it does.

Direct Testimony of
Charles R. Dickerson

1 DELMARVA POWER & LIGHT COMPANY
2 TESTIMONY OF CHARLES R. DICKERSON
3 BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION
4 IN THE MATTER OF THE INVESTIGATION BY THE
5 DELAWARE PUBLIC SERVICE COMMISSION
6 INTO IMPLEMENTATION OF DYNAMIC PRICING
7 DOCKET NO. 09-311

8 1. Q: Please state your name and position, and business address.

9 A: My name is Charles R. Dickerson, Vice President Customer Care for Pepco
10 Holdings, Inc., (“PHI”), I am testifying in this proceeding on behalf of Delmarva Power
11 & Light Company (“Delmarva” or “the Company”). My business address is Edison
12 Place, 701 9th Street, N.W., Washington, D.C. 20068-0001.

13 2. Q: What are your responsibilities in your role as Vice President, Customer Care?

14 A: I am responsible for all aspects of customer care, including meter reading, billing,
15 credit, customer care centers, and program marketing.

16 3. Q: Please describe your educational and professional background.

17 A: Since joining PHI in 1989, I have served in numerous roles including Manager for
18 Customer Operations Division, Director – Diversity & HR Strategic Planning, VP – Gas
19 Delivery for Delmarva, and VP of Strategic Planning and Chief Risk Officer. I earned a
20 B.S. degree in Mechanical Engineering and a M.S. in Applied Management, both from
21 the University of Maryland.

1 4. Q: What is the purpose of your testimony?

2 A: The purpose of my testimony is to provide an overview of the Company's
3 education and customer engagement plans with regard to dynamic pricing and also to
4 provide general information on best practices in the industry.

5 5. Q: When will Delmarva residential customers be introduced to dynamic pricing?

6 A: Starting with the first quarter of 2012, the Company proposes to begin the
7 implementation for the 7,000 residential customers who participated in the Advanced
8 Metering Infrastructure ("AMI") Field Acceptance Test Standard Offer Service ("SOS")
9 customers. These customers will be defaulted to the Dynamic Pricing Rider ("Rider
10 DP") which is based on a critical peak rebate pricing plan, one form of dynamic pricing.
11 During the first six months of 2012, Delmarva will provide educational materials to these
12 residential SOS customers using targeted communications. The goal is to educate
13 customers about dynamic pricing, encourage customers to set their preferences for
14 notification of critical peak events, and to learn how to earn rebates by reducing energy
15 use during critical peak events.

16 Beginning in 2013, the educational effort will be expanded for all Delmarva
17 residential SOS customers, which will allow the Company to use other educational
18 channels above and beyond direct communications, such as mass media and social media.
19 Delmarva also plans to partner with community-based organizations, including social
20 service agencies, special interest groups, faith-based organizations and non-English
21 speaking advocacy groups for more face-to-face outreach. This will enable the Company
22 to provide education more effectively to customers belonging to distinct marketing

1 segments such as customers with low incomes, seniors, and diverse ethnic groups.
2 However, the goals of these enhanced education efforts will be the same as for the earlier
3 effort in 2012 – educate customers about Dynamic Pricing, encourage customers to set
4 preferences for notification of critical peak events, and learn how to earn rebates by
5 reducing energy usage during critical peak events.

6 **6. Q: When will Delmarva’s non-residential customers be introduced to dynamic pricing?**

7 A: Beginning in 2013, Delmarva proposes to introduce dynamic pricing to non-
8 residential customers served under SOS rates who participated in the AMI Field
9 Acceptance Test. Thus, an estimated 800 small and 200 medium non-residential
10 customers would be placed under these rates in 2013. Delmarva will provide targeted
11 educational materials to these non-residential customers in early 2013 to prepare them for
12 the rate change. Similar to residential customers, non-residential customers will be
13 invited to set their preferences for notification of critical peak events and learn how to
14 reduce energy during events.

15 In 2014, the Rider DP is proposed to become the default pricing plan for all SOS
16 small and medium non-residential customers served by Delmarva. The education
17 channels for additional non-residential SOS customers is expected to primarily include
18 direct mail, direct customer contact, and social media that would begin in early 2014.

19 **7. Q: Why is the Company proposing to offer customers only one dynamic pricing plan**
20 **initially?**

21 A: Customers will be introduced to a number of new concepts through Rider DP, and
22 starting with one dynamic pricing plan is expected to provide the customers sufficient

1 time to learn about dynamic pricing in general, how to reduce energy use during critical
2 peak events, their benefits from participation, and what tools are provided by Delmarva
3 to assist them. A rebate rate form of dynamic pricing is expected to be initially more
4 appealing to a broader range of customers.

5 Customers taking service under Rider DP will be educated about critical peak
6 events and learn that the Company is asking customers to reduce energy use during these
7 events. In return, the Company will offer a significant rebate for each kWh reduced by
8 residential or business customers during critical peak events.

9 Customers will also be encouraged to establish their preference for email, phone,
10 or text notifications from the Company to alert them to upcoming critical peak events. In
11 addition, customers will have access to detailed information on the “My Account” web
12 portal, including a preliminary calculation of rebates earned during previous critical peak
13 events. For each critical peak event, customers may log onto “My Account” the next day
14 to view their performance during the event.

15 The customer bill format will also be changed to provide detailed information on
16 each critical peak event during the billing period, and the credit applied to their electric
17 bill based on the rebates earned for energy usage reduction during the events. The new
18 bill format will also contain additional information regarding energy use for all Delmarva
19 customers.

20 **8. Q: Please describe the quality assurance process for billing for dynamic pricing?**

21 **A:** Delmarva is keenly aware that the success of dynamic pricing depends in great
22 part on our ability to bill customers accurately under Rider DP. The Company will

1 continue a rigorous process of reviewing bills before they are presented to customers. In
2 addition, the Company continues to monitor the experience of other utilities to ensure that
3 Delmarva has a plan to avoid problems that have emerged in other jurisdictions. We are
4 training our billing employees to work with customers to address any concerns that may
5 arise.

6 9. Q: What steps are you planning to take to inform and educate customers about the
7 dynamic pricing program?

8 A: Market and consumer research are the foundation of a successful education plan.
9 The education plan for the dynamic pricing program will be based on the prior and
10 ongoing research and customer segmentation studies. Additionally, Delmarva is tracking
11 best practice strategies for other dynamic pricing education efforts.

12 During the phase-in of dynamic pricing, customer education will be focused on
13 using direct mail, bill messaging and bill inserts to target the initial group of customers.

14 Following the initial phase-in period, customer education will be enhanced to
15 include radio, print, cable and the Internet for broader outreach and to cover all
16 customers. Delaware is a unique market for advertising and marketing with mass
17 communications as it has overlapping media messaging from three of the top ten
18 Designated Market Areas (“DMAs”); New York/New Jersey, Baltimore and
19 Philadelphia. As described earlier, with the broader outreach, Delmarva will partner with
20 community-based organizations, allowing the Company to deliver written materials and
21 other forms of information to customer segments that are less reliant on more
22 “traditional” forms of communication.

1 **10. Q: What would be the key elements in your education plan and how would they work?**

2 **A:** Introducing customers to dynamic pricing will be accomplished by executing a
3 thoughtful, integrated communications and education plan to inform and teach customers
4 about the new pricing plan. Delmarva has initiated the first stage of its AMI educational
5 effort which will allow the Company to transition seamlessly into education for dynamic
6 pricing. While traditional methods of communication such as direct mail, web based
7 education, print and paid media support will be at the core of the education plan for
8 dynamic pricing, Delmarva knows that communicating the changes brought by dynamic
9 pricing requires more than a one-size-fits-all education plan. A higher level of
10 community-based engagement will be used to help personalize the education. This
11 approach will be particularly important to the seniors and hard-to-reach customers.

12 Information and results garnered from the AMI customer education program also
13 will guide the dynamic pricing education program. Using measurements and results of
14 the AMI selection of media outlets, strategic partnerships, creative and interactive web,
15 message testing and collateral, Delmarva will have a proven record of the most effective
16 outlets for education of the dynamic pricing program. This includes identifying and
17 testing effective keywords and messages, measuring the effectiveness of specific media
18 outlets such as radio, on-line and publications and reviewing partner activities and call
19 center interactions.

20 Recent research on what content assists consumers in being successful at peak
21 reduction indicates that providing appliance level usage data supports success in peak
22 reduction (usage was 6% lower in simulations than for those households that had whole

1 house data).¹ This is one of the rationales for providing appliance level usage estimates
2 in Delmarva’s “My Account” web portal and recommending that customers register for
3 My Account in early communications.

4 **11. Q: How will the phase-in of dynamic pricing improve the education effort?**

5 **A:** A phased approach allows education tools and resources to be refined prior to
6 their application to the entire population. The Company will carefully monitor the
7 success of its education efforts for each market segment. For example, more cautious
8 customers may respond better to testimonial endorsements by neighbors or by receipt of
9 information by trusted organizations such as community service or faith-based groups.

10 **12. Q: What lessons have you learned from your experience in the pilot program in the**
11 **District of Columbia for customer education and marketing?**

12 **A:** PowerCentsDCTM was a trial to evaluate customer acceptance of dynamic pricing
13 and smart thermostats enabled by the deployment of smart meters. Customers were
14 placed on one of three pricing plans: critical peak pricing, critical peak rebates and hourly
15 pricing. The program was awarded Outstanding Achievement in Pricing and Demand
16 Response by the Association of Energy Service Professionals². The program has also
17 been studied and lauded for its design and implementation.³.

18 From a customer satisfaction perspective, 86 percent of critical peak rebate
19 (“CPR”) participants would recommend these pricing plans. Importantly, based on PHI’s

¹ Herter, Karen, and Seth Wayland. 2009. Behavioral Experimentation with Residential Energy Feedback through Simulation Gaming. California Energy Commission, PIER Buildings End-Use Energy Efficiency Program, p22.

² Award recipients are listed on the AESP web site at: <http://aesp.org/displaycommon.cfm?an=1&subarticlenbr=114>

³ See also PowerCentsDCTM Final Program Report, September 2010.

1 analysis, all CPR participants surveyed with incomes of less than \$25,000 annually would
2 recommend the CPR plan to their friends and family. It is notable that the vast majority
3 of customers were able to save money, irrespective of income.

4 In terms of demonstrating the efficacy of dynamic pricing rates to reduce peak
5 consumption, PowerCentsDC™ was a resounding success. Customers of all rate classes
6 and economic groups responded to critical events, reducing usage consistently and as
7 expected. These savings show that the Company can effectively educate customers and
8 drive response to innovative rate structures through direct messaging and community
9 outreach. Furthermore, as smart thermostats and other enabling technology become more
10 popular with consumers, the savings become easier to attain with less direct action
11 necessary by customers.

12 The PowerCentsDC™ results suggest that if all Delmarva Power SOS customers
13 were given the opportunity to try dynamic pricing with as few enrollment barriers to
14 participate as possible, a high percentage of customers will appreciate the opportunity.

15 **13. Q: Can you describe other successful education efforts elsewhere in the nation to**
16 **introduce customers to new pricing plans?**

17 **A:** Salt River Project (“SRP”) in Arizona serves 25 percent of its customers under
18 various time-of-use (“TOU”) pricing plans. SRP offers a web portal that uses customer
19 friendly language to assist customers in making decisions. SRP also provides a typical
20 profile for a customer who successfully saves money on each pricing plan. The profiles
21 are based on information a customer would easily know or have access to, such as “Is
22 your August bill over \$200?” Delmarva is planning to incorporate customer friendly

1 language and to focus on information easily accessible to customers in our education
2 plans.

3 SRP provides customers with energy tips provided by other customers via a
4 customer blog on the company web portal. Customers considering moving to a TOU
5 pricing plan can read about the experiences of other customers on each TOU rate plan to
6 use in their decision making. Delmarva is planning to provide similar opportunities for
7 its customers that are eligible for dynamic pricing.

8 **14. Q: How will you measure the success of your education effort?**

9 **A:** The Company will rely on several methods to measure success of our education
10 efforts. The first metric will be how many customers set their preferences for notification
11 of events by calling our customer call center or via the “My Account” web portal.
12 Another key metric will be to measure energy reductions during critical peak events.
13 Additional metrics will include:

- 14 a. Analyzing the use of the “My Account” web portal for new activations
- 15 b. Call center inquiries about dynamic pricing,
- 16 c. Partner activation outreach and face-to-face participation
- 17 d. Program sign-ups for bill-to-date.

18 In addition, the Company will conduct ongoing research to learn which customers
19 are actively participating and perceived barriers to participation. Delmarva has
20 contracted Market Strategies International (“MSI”) to provide ongoing customer market
21 research for its customer education program around dynamic pricing. As part of this

1 relationship, MSI has helped propose and guide Delmarva through its recommended
2 market research activities that impact customer education.

3 To date, Delmarva has already contracted and conducted a baseline customer
4 survey to gauge knowledge and interest level in AMI programs (Q4 2010). This baseline
5 study will be repeated after the launch of the dynamic pricing education campaign to
6 measure our levels of success and satisfaction with the program. Additionally, customer
7 research will be conducted beforehand to test messages and communications to ensure
8 they resonate with customers, encourage customers to provide contact information for
9 critical peak event notifications, and drive customers to act by reducing energy use during
10 critical peak events. Customer research will be conducted to determine the
11 communications channels that will most effectively deliver these messages.

12 In addition, Delmarva is working with MSI on a segmentation study for Delaware
13 in the first half of 2011. Results from this study will help guide and drive education
14 communication activities and messaging around dynamic pricing. Providing testimonials
15 of early adopters to encourage others will be a critical element in making the program
16 successful.

17 **15. Q: How will customers be notified of a critical peak event?**

18 **A:** Customers will be able to select from two of three different channels of
19 notification that a critical peak will occur; phone call, text message or email. The
20 customer will be able to select their preferences by logging into the “My Account” web
21 site or by calling the Delmarva Call Center and speaking to a customer service
22 representative. Delmarva will make a reasonable attempt to notify customers of an

1 anticipated Critical Peak Event by 8 P.M. the day prior to the event; although same day
2 unexpected emergency events may occur. Communications through media channels will
3 also be utilized to inform customers of an event.

4 If the customer does not select any notification preference, Delmarva will notify
5 customers by phone messages using contact numbers available from the Company
6 records. For customers who prefer to not be contacted about events, customers may opt
7 out of notification by calling the customer call center or via “My Account”.

8 **16. Q: How will customers be able to review their results?**

9 **A:** Delmarva will provide summaries of details of customer response to critical peak
10 events and rebates earned on their bill and in “My Account”. Both channels will use the
11 same terms to make it easier for customers to compare their bill with the information
12 provided on “My Account.” On the bill and on “My Account”, Delmarva will provide
13 information for each critical peak event, including regularly scheduled events and
14 emergency events. In addition, on “My Account”, customers will have access to details
15 of their past bills as well as the current bill.

16 Since most customers look at their electric bills on a monthly basis, Delmarva
17 considers bills for all customers to be a key educational opportunity. Customer bills will
18 include information on how much energy customers reduced on critical peak days and the
19 dollar amount of rebates earned. Customers will be encouraged to log in to “My
20 Account” the day after a critical peak event to receive feedback about how much they
21 reduced and the rebate earned during the event. Customers will also be able to access
22 through “My Account” more detailed information on their hourly usage.

1 Delmarva is also planning to provide a “Bill-to-Date” function as of the day
2 before on “My Account” for all customers with AMI. Delmarva’s affiliate utility has
3 experience with this function through the PowerCentsDC™ project.

4 Providing an AMI enabled Bill-to-Date function is emerging as an industry best
5 practice. For example, Reliant, an energy supplier based in Texas, sends customers a
6 weekly email with a bill-update for all customers who sign up for the service. To date,
7 175,000 Reliant customers have signed up for this weekly email service. Pacific Gas &
8 Electric (“PG&E”) now provides a Bill-to-Date update on the PG&E “My Account” web
9 portal for all customers with AMI. Delmarva expects that the provision of the Bill-to-
10 Date may encourage more customers to access “My Account.” The Bill-to-Date will also
11 be available to customer service representatives for customers who prefer to call rather
12 than visit the Company web portal. Delmarva will consider other options of providing
13 Bill-to-Date and other useful information to customers to improve customer engagement.

14 **17. Q: How will Company employees be used to help customers understand and take**
15 **advantage of the program?**

16 **A:** Delmarva is planning to use a tiered approach to enable the Company to help
17 educate customers about dynamic pricing and respond to customer inquiries. The first
18 tier is comprised of our current customer call representatives, who will assist customers
19 with more basic inquiries. These representatives will be trained to assist customers to
20 select critical peak event notification method -- email, text, or phone. They can also
21 answer basic questions about dynamic pricing.

1 The second tier will consist of Energy Advisors, to provide Delmarva residential
2 and small non-residential customers more assistance to reduce their energy use, and
3 manage their energy spending, and to assist them with using the new features of the “My
4 Account” web portal.

5 The third tier will be the Energy Engineering Team. This team will consist of
6 employees with a higher level of technical skills and will provide more solutions-oriented
7 information to residential and commercial customers who have complex questions or are
8 looking for more consultative help.

9 **18 Q : Please describe the training that employees will undergo to prepare for their new**
10 **roles?**

11 **A:** Customer Care employees, whether primarily customer-facing or not, will receive
12 training and be tested, as needed, to ensure that employees have a basic knowledge of
13 dynamic pricing and other AMI related customer programs. Planned methods of
14 education include an informational intranet site, workshops, and rely upon Company
15 managers, supervisors, and “change agents” to facilitate discussion.

16 **19. Q: How will the dynamic pricing program be branded?**

17 **A:** The branding of the dynamic pricing program has yet to be finalized. Delmarva is
18 working closely with an outside education communications firm to develop a brand name
19 for dynamic pricing. The proposed brand name will subsequently be tested in focus
20 groups and through a series of market research surveys to ensure that it resonates
21 positively with customers.

1 20. Q: Does this conclude your testimony?

2 A: Yes, it does.

1 DELMARVA POWER & LIGHT COMPANY
2 TESTIMONY OF JOSEPH F. JANOCHA
3 BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION
4 IN THE MATTER OF THE INVESTIGATION BY THE
5 DELAWARE PUBLIC SERVICE COMMISSION
6 INTO IMPLEMENTATION OF DYNAMIC PRICING
7 DOCKET NO. 09-311

8 1. Q: Please state your name and position, and business address.

9 A: My name is Joseph F. Janocha. I am the Manager of Rate Economics for
10 Pepco Holdings Inc. ("PHI"). My business address is 401 Eagle Run Road,
11 Newark, DE 19702. I am testifying on behalf of Delmarva Power & Light
12 Company ("Delmarva", "the Company").

13 2. Q: What is your educational and professional background?

14 A: I have a Bachelor of Engineering degree with a concentration in
15 Mechanical Engineering from Stevens Institute of Technology (Hoboken, New
16 Jersey). I am a Registered Professional Engineer in the State of New Jersey and
17 the Commonwealth of Pennsylvania.

18 3. Q: Please describe and summarize your employment experience in the utility
19 industry.

20 A: I began my career with Philadelphia Electric Company ("PECO") in 1982
21 as an engineer in the Mechanical Engineering Division. From 1982 through 1992,
22 I held various positions in PECO's Mechanical Engineering, Nuclear Quality
23 Assurance, and Nuclear Engineering Divisions. I joined Atlantic City Electric
24 Company ("ACE") in 1992 as a Senior Engineer in the Joint Generation
25 Department. In 1998, I joined the Regulatory Affairs group as a Coordinator,

1 responsible for the design and administration of electric rates for the ACE
2 subsidiary. In March 2005, I was promoted to Regulatory Affairs Manager,
3 responsible for rate design and administration for PHI's Delmarva Power & Light
4 (DPL) and ACE subsidiaries. I assumed my current position in January 2011. In
5 this capacity, I am responsible for the development and administration of electric
6 and gas delivery rates, as well as tariff surcharges, for all of PHI's utility
7 subsidiaries.

8 **4. Q: What is the purpose of your testimony?**

9 A: The purpose of my testimony is to present rate design and tariffs for the
10 Company's proposed dynamic pricing rate. The dynamic pricing rate and tariffs
11 include a Critical Peak Rebate ("CPR") pricing structure for Delmarva Power's
12 residential, small commercial and medium commercial customers.

13 **5. Q: Please describe the proposed tariffs.**

14 A: The Company's proposed tariff pages are provided as Schedule JFJ-1.
15 Dynamic Pricing Rider "DP" is a Rider to the residential and small and medium
16 commercial schedules listed in the "Applicability" paragraph. Rider DP modifies
17 the SOS Generation portion of the bill by specifying CPR as the default pricing
18 structure. The CPR pricing structure is designed to give customers strong
19 incentives to reduce consumption during the times when the cost of producing
20 electricity is highest. After an initial period of participation on CPR, consisting
21 of all or part of the CPR effective period of May 1 through September 30, a
22 customer will have the option to take service under the applicable Standard Offer
23 Service ("SOS") rates delineated in Rider SOS. The customers would be able to

1 exercise this option at any time during the period of October 1 through April 30
2 following initial CPR participation. Customers will be able to switch to a Third
3 Party Supplier (“TPS”) at any time.

4 **6. Q: Why is Rider DP only applicable to customers taking Standard Offer**
5 **Service?**

6 A: The Rider is limited to customers taking Standard Offer Service to avoid
7 interfering with the workings of the competitive market. The Company
8 anticipates that competitive suppliers may develop their own dynamic pricing
9 offerings as the implementation of AMI is completed in the Company’s Delaware
10 service territory.

11 **7. Q: Please describe the CPR pricing structure.**

12 A: Under CPR, the SOS Generation Service portion of the individual
13 customer’s bill is modified by a credit calculated by applying the price shown in
14 the CPR table to the difference between actual kWh consumption and a Customer
15 Base Line (“CBL”) level of consumption during Critical Peak Periods designated
16 by the Company. For each critical peak event, there will be no penalty if the
17 Customer’s usage is above the CBL. All kilowatt-hour usage, including the kWh
18 actually consumed during Critical Peak periods, will be priced at the normally
19 applicable Rider SOS rate. The development of these prices will be discussed in a
20 later section of this testimony.

21 **8. Q: How will the CBL be determined for CPR?**

22 A: The CBL will be calculated for each critical peak event as the hourly
23 average of the customer’s usage during similar hours for the three days with the

1 highest peak usage during the prior 30-day period. Weekends, holidays, the day
2 before the critical peak event and critical peak days are not included in this
3 calculation.

4 **9. Q: Please describe the mechanism for determining the Critical Peak**
5 **Period.**

6 **A:** The Critical Peak Periods will be based on Critical Peak Events,
7 which may be called under conditions including, but not limited to, higher than
8 normal PJM day-ahead Locational Marginal Prices (LMPs), or during PJM
9 emergencies. Each Critical Peak Event could occur between the hours of 12 p.m.
10 through 8 p.m., and could last a maximum of 6 hours. The Company will make a
11 reasonable attempt to notify Customers of an anticipated Critical Peak Event by 8
12 p.m. of the day prior to an event. Customers will receive an automated phone
13 call, email, or text message, or combination thereof, at the customer's option,
14 notifying them that a critical peak event will occur on the following day.
15 Customers may also contact the Company's customer service via a toll free
16 number for pricing information, or visit the Company website.

17 **10. Q: Please describe the development of the CPR prices.**

18 **A:** Work sheets showing the development of the CPR prices are
19 attached as Schedule JFJ-2. The first step in the development of the prices shown
20 in the tariff tables was to develop a Base Critical Peak Price, which is the sum of
21 PJM capacity and energy prices intended to be representative of those that would
22 be anticipated under high cost conditions in the Delmarva PJM Zone during the
23 rate effective period.

1 The energy component of the Base Critical Peak Price is the average of
2 the 60 highest PJM LMPs during the summer of 2010, adjusted for line losses to
3 the user level. The energy component is \$0.30/kWh at the low voltage level and
4 \$0.29/kWh at the high voltage level.

5 The capacity component of the Base Critical Peak Price is based on the
6 average of the PJM Base Residual Auction Results for years 2012-2013 and 2013-
7 2014, adjusted for line losses to the user level and spread over the 60 hours of
8 potential exercise of Rider DP. The capacity component is \$1.34/kWh at the low
9 voltage level and \$1.31/kWh at the high voltage level.

10 The total Base Critical Peak Price is \$1.64/kWh at the low voltage level
11 and \$1.60/kWh at the high voltage level. For rate simplicity, it was determined to
12 disregard the minor differences due to voltage levels and use the same Base
13 Critical Peak Price for all classes of \$1.60/kWh. The Base Critical Peak Price is
14 then used directly as the CPR. In addition, there is a \$1.00 floor per kwh reduced
15 on the Critical Peak Rebate, in order to ensure customer response if capacity and
16 energy prices are low. The nature of this default option virtually guarantees that
17 the Customer will be better off if responding to the price, and will be no worse off
18 if not responding.

19 **11. Q: Please describe the Company's plan to update Rider DP.**

20 **A:** As stated in the Annual Update paragraph of Rider DP, the Company will
21 update the CPR stated in the tariff tables in an annual filing on March 1. Updated
22 prices will reflect the most recently available PJM capacity and energy market
23 prices.

1 12. Q: Please explain how the Company will achieve revenue neutrality under the
2 proposed dynamic pricing mechanism.

3 A: After September 30 of each year, the Company will evaluate the CPR
4 program by rate class. The Company will evaluate the amount billed for the
5 period May 1 through September 30 versus the amount that would have been
6 billed for the same consumption using standard SOS rates. In the event that
7 emergency critical peak events occur during other times of the year, these event
8 days will be included in the annual evaluation. This calculation will include all
9 resulting PJM demand response market earnings and bill credit amounts paid.
10 The difference will be incorporated into the SOS Procurement Cost Adjustment
11 (“PCA”), which would be filed on or about March 31st of the following year.

12 13. Q: How will the Company account for the dynamic pricing components?

13 A: Using the AMI technology, the Company will collect data regarding
14 Critical Peak Events, Critical Peak Period and non-Critical Peak Period
15 consumption, and usage for each participant in each program. This will allow the
16 Company to keep a total of amounts collected or credited during event periods as
17 well as non-event periods making the true-up calculations described above
18 feasible.

19 14. Q: Have you reviewed the Commission’s Minimum Filing Requirements in
20 context of this filing?

21 A: Yes, I did. Although this is not a request for a rate increase, the Company
22 has included an Application and Testimony, along with proposed tariffs as
23 required by the Commission’s Minimum Filing Requirements.

1

2 15. Q: Does this conclude your testimony?

3 A: Yes, it does.

DYNAMIC PRICING
RIDER "DP"

A. Applicability

For the period June 1, 2012 – May 31, 2013:

This Rider is applicable to customers who:

1. Take electric service under Service Classifications R, Space Heating R, R-TOU-ND;
2. Receive Standard Offer Service under Rider SOS;
3. Have Advanced Metering Infrastructure (AMI) System smart meters furnished by the Company; and
4. Are included in the Field Acceptance Test Program.
5. Customers currently taking service under Rider PM (Peak Management Rider) would not be eligible to take service under Rider DP.

For the period June 1, 2013 – May 31, 2014:

This Rider is applicable to customers who:

1. Take electric service under Service Classifications R, Space Heating R, R-TOU-ND;
2. Receive Standard Offer Service under Rider SOS;
3. Have Advanced Metering Infrastructure (AMI) System smart meters furnished by the Company; and
4. Take electric service under Service Classifications SGS-ND, MGS, LGS and GSP and are included in the non residential Field Acceptance Test Program.
5. Customers currently taking service under Rider PM (Peak Management Rider) and/or Rider HPS (Hourly Priced Service) would not be eligible to take service under Rider DP.

Effective June 1, 2014:

This Rider is applicable to customers who:

1. Take electric service under Service Classifications R, Space Heating R, R-TOU-ND, SGS-ND, MGS, LGS and GSP;
2. Receive Standard Offer Service under Rider SOS; and
3. Have Advanced Metering Infrastructure (AMI) System smart meters furnished by the Company.
4. Customers currently taking service under Rider PM (Peak Management Rider) and/or Rider HPS (Hourly Priced Service) would not be eligible to take service under Rider DP.

B. Pricing Options

Rider "DP" is applicable to the SOS Supply portion of the customer's bill.

All customers served under Rider "DP" will be placed on a Critical Peak Rebate (CPR) pricing structure. After an initial period of participation on CPR, consisting of all or part of the CPR effective period of May 1 through September 30, a customer has the option to take service under the applicable standard SOS rates delineated in Rider SOS. The customer can exercise this option at any time during the period of October 1 through April 30 following initial CPR participation.

C. Billing

Critical Peak Rebate Billing - CPR

Under CPR, the SOS Generation Service portion of the customer's bill will be modified by a credit calculated by applying the Critical Peak Rebate to the difference between actual kWh consumption and a Customer Base Line (CBL) level of consumption during certain high cost hours designated by the Company. All kilowatt-hour usage, including the kWh actually consumed during Critical Peak periods, will be priced at the normally applicable Rider SOS rate.

CPR CRITICAL PEAK REBATE PRICES
(Effective June 1, 2012)

| Rate | Critical Peak Rebate (\$/kWh) |
|----------|----------------------------------|
| R | \$ 1.60 |
| RSH | \$ 1.60 |
| R-TOU-ND | \$ 1.60 |
| SGS | \$ 1.60 |
| MGS | \$ 1.60 |
| LGS | \$ 1.60 |
| GSP | \$ 1.60 |

DYNAMIC PRICING
RIDER "DP" – (continued)

D. Terms and Conditions

1. Meter Reading

The hourly readings of the Smart Meter will be aggregated into the Critical Peak and non-Critical Peak periods designated by the Company, to the nearest multiple of the meter constant, and bills rendered accordingly.

2. Customer Base Line (CBL)

The CBL is calculated as the average of the customer's use during similar critical peak hours for the three days with the highest use during the prior 30-day period. Weekends, the day prior to a critical peak event, and critical peak days are not included in this calculation.

3. Critical Peak Events

The Company may call for up to 15 Critical Peak events annually. Events will normally be called on weekdays during the period from May 1 through September 30. Each Critical Peak Event may occur from 12 p.m. through 8 p.m., and last a maximum of 6 hours. Critical Peak Events may be called in situations including, but not limited to, when day-ahead LMP prices are higher than normal. Critical Peak Events may also be called during periods of PJM or Company system emergencies, which may occur at any time during the year.

E. Notification

The Company will make a reasonable attempt to notify Customers of an anticipated Critical Peak Event by 8 p.m. of the day prior to an event. Customers will receive an automated phone call, email, or text message, or combination thereof, at the customer's option, notifying them that a critical peak event will occur on the following day. Customers may also contact Delmarva Power customer service via a toll free number for pricing information or visit the Delmarva Power website at www.delmarva.com.

F. Annual Update

The Company will update the Critical Peak Rebates stated above in an annual filing on March 1 to reflect the most recently available PJM capacity and energy market prices. Adjustments resulting from customer response to the price signals and net proceeds from participating in PJM demand response programs will be reflected in the annual Procurement Cost Adjustment (PCA) update.

Delmarva Power & Light - Delaware Electric
Critical Price Calculation

| CLASS | ENERGY LOSS FACTOR | ENERGY CRIT PRICE | CAPACITY LOSS FACTOR | CAPACITY CRIT PRICE | TOTAL CRIT PRICE |
|----------------|--------------------|-------------------|----------------------|---------------------|------------------|
| RESIDENTIAL | 1.0636813 | \$ 0.30 | 1.0636813 | \$ 1.34 | \$ 1.64 |
| RES SPACE HEAT | 1.0636813 | \$ 0.30 | 1.0636813 | \$ 1.34 | \$ 1.64 |
| Res TOU ND | 1.0636813 | \$ 0.30 | 1.0636813 | \$ 1.34 | \$ 1.64 |
| SGS | 1.0636813 | \$ 0.30 | 1.0636813 | \$ 1.34 | \$ 1.64 |
| MGS | 1.0636813 | \$ 0.30 | 1.0636813 | \$ 1.34 | \$ 1.64 |
| LGS | 1.0636813 | \$ 0.30 | 1.0636813 | \$ 1.34 | \$ 1.64 |
| GSP | 1.0402971 | \$ 0.29 | 1.0402971 | \$ 1.31 | \$ 1.60 |

CRITICAL MARGINAL PRICE AT GENERATION LEVEL

| | | |
|----------|--|-------------|
| CAPACITY | \$ 75.686901 | per kW year |
| | \$ 1.261448 | per kWh |
| | (\$139.83/MW-DAY average of '11/'12 and '12/'13 Base Residual Auction Results, spread over 60 hours) | |

ENERGY \$ 0.280808 (AVERAGE OF DPL ZONE 2010 60 HIGHEST HOURS)

1 DELMARVA POWER & LIGHT COMPANY
2 TESTIMONY OF STEPHEN L. SUNDERHAUF
3 BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION
4 IN THE MATTER OF THE INVESTIGATION BY THE
5 DELAWARE PUBLIC SERVICE COMMISSION
6 INTO IMPLEMENTATION OF DYNAMIC PRICING
7 DOCKET NO. 09-311

8 1. Q: Please state your name, position and address.

9 A: My name is Stephen L. Sunderhauf. I am the Manager of Program Design
10 and Evaluation for Pepco Holdings, Inc. ("PHI"). I am testifying in this
11 proceeding on behalf of Delmarva Power & Light Company ("Delmarva" or the
12 "Company"). My business address is Edison Place, 701 9th St., N.W.,
13 Washington, D.C. 20068-0001.

14 2. Q: What are your responsibilities in your role as Manager of Program Design
15 and Evaluation for PHI?

16 A: I currently serve as the Manager of the Program Design and Evaluation
17 Department within the Customer Care Group of PHI. My current responsibilities
18 include the oversight of program design and regulatory issues related to energy
19 efficiency, conservation, demand response and renewable energy sources on
20 behalf of the Potomac Electric Power Company, Atlantic City Electric Company,
21 and Delmarva.

22 3. Q: Please describe your educational and professional background.

23 A: I have 29 years of professional experience within the U.S. electric utility
24 industry, including more than 25 years at PHI, where I have served in a variety of
25 capacities and am currently the Manager of the Program Design and Evaluation

1 Department. I earned a B.A. degree in economics from Bucknell University, an
2 M.S. degree in management from Carnegie-Mellon University, and a J.D. degree
3 from the George Washington University Law School. I am a member of the
4 Maryland Bar and the Association of Energy Services Professionals.

5 **4. Q: What is the purpose of your testimony?**

6 **A:** The purpose of this testimony is to summarize the work the Company has
7 conducted to quantify the benefits of demand response associated with
8 Delmarva's proposed dynamic pricing rate. In addition, my testimony will
9 address the structure and implementation of this program. I have updated the
10 program impact analysis originally conducted by the Company during 2007. The
11 conclusions of my testimony reflect these updates.

12 **5. Q: How will Delmarva's dynamic pricing tariffs benefit customers?**

13 **A:** The benefits from dynamic pricing accrue to customers in several ways.
14 First, as more accurate pricing is introduced into the market and peak demand is
15 reduced, the costs of generating and supplying electricity could be reduced. For
16 example, expensive peaking generators will not need to run as frequently, some
17 distribution infrastructure improvements may be deferred, and other new
18 generation facilities may be delayed or even avoided completely. These savings
19 will benefit all Delmarva electricity customers, whether or not they actively
20 participate in dynamic pricing. The other market response is shorter term, but
21 also significant – Delmarva's dynamic pricing program will mitigate wholesale
22 energy and capacity costs within the regional wholesale electricity market.

1 **6. Q: How did you estimate the demand reductions that would be achieved**
2 **through a critical peak rebate form of dynamic pricing?**

3 **A:** Delmarva has worked with pricing and modeling experts within the Brattle
4 Group to estimate the demand reductions that will be achieved through
5 customers' price elasticity response to the proposed critical peak rebate rate. The
6 Company has performed a detailed study of projected energy and demand savings
7 attributable to dynamic pricing in the Company's Delaware service territory based
8 upon load reduction impacts from available and applicable industry studies. The
9 residential impacts of dynamic pricing programs in Delaware were estimated by
10 adapting the Pricing Impact Simulation Model ("PRISM") to the price elasticities
11 obtained through the Baltimore Gas & Electric dynamic pricing pilot. These
12 estimates were adjusted for Delaware specific load shapes and weather
13 conditions.

14 The decision to use the results of the BGE study rather than those of
15 Delmarva's utility affiliate in the District of Columbia were due to the greater
16 similarity of residential customer demographics in Delaware and in Maryland
17 versus the residents of a large city. A summary of demographic similarities and
18 differences is presented in Table 1 below.

19 **Table 1**

| | MD | DE | DC |
|------------------------------|-------|--------------|-------|
| Homes Built Post 1980 | 40.5% | 47.4% | 11.9% |
| Homes Built Pre 1980 | 59.5% | 52.6% | 88.1% |
| Single Family Detached Homes | 51.7% | 57.4% | 12.7% |
| Apartments (20+ Units) | 7.4% | 4.3% | 32.3% |
| CDD (65+) | 1,226 | 1,139 | 1,547 |

1 The non-residential customer impacts were estimated through the PRISM
2 developed through the elasticities estimated from the extensive California
3 dynamic pricing pilots. These estimates were adjusted for Delaware specific load
4 shapes and weather conditions.

5 **7. Q: Did you account for existing and future energy efficiency and conservation**
6 **programs in Delaware?**

7 **A:** Yes, Delmarva’s dynamic pricing impact study accounted for projected
8 energy efficiency and conservation savings expected to be achieved by the
9 Delaware Sustainable Energy Utility. These initiatives lessen the estimated
10 demand savings that will be achieved by dynamic pricing programs.

11 **8. Q: Did you account for existing and future utility provided direct load control**
12 **programs?**

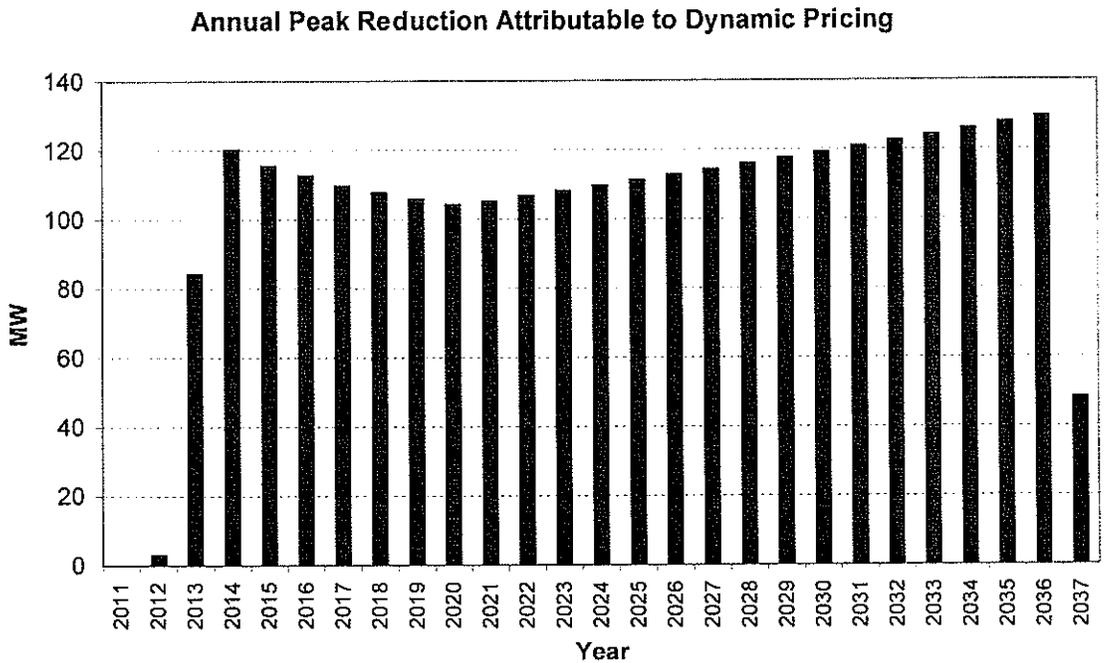
13 **A:** Yes, Delmarva Program’s dynamic pricing impact study accounted for the
14 current legacy and expected future direct load control programs in Delaware. The
15 automated savings from this equipment were excluded from the impact
16 calculations.

17 **9. Q: What assumptions were made regarding customer participation in dynamic**
18 **pricing?**

19 **A:** The dynamic pricing deployment scenario for Delaware was analyzed
20 based upon the Company’s proposed implementation of the program. It was
21 assumed that customers served under Standard Offer Service (“SOS”) rates are
22 defaulted to a Critical Peak Rebate (“CPR”) rate structure, as proposed by
23 Delmarva. Seventy-five percent of eligible SOS customers, both residential and

1 non-residential customers, are expected to participate and take action in response
2 to Rider DP. The estimated demand response is shown in Table 2. Dynamic
3 pricing is estimated to achieve a reduction in peak demand of 111 MW in
4 Delaware by the year 2025, shown in Table 2.

5 **Table 2: Projected System Peak Reduction**



Notes:
1. Decrease in dynamic pricing impacts until 2020 is due to projected increases in participation in EE&C and DLC programs
2. Impacts in 2037 reflect only C&I enrollment in dynamic pricing

6
7 **10. Q: Previous Delmarva plans suggested that critical peak pricing (“CPP”) would**
8 **be available in addition to the proposed critical peak rebate. Why has this**
9 **approach changed?**

10 **A:** The Company believes that a simplified approach to the introduction of
11 dynamic pricing is appropriate. Under this approach only one form of dynamic
12 pricing would be initially introduced by Delmarva to customers, the critical peak
13 rebate rate form described in Mr. Janocha’s testimony. This approach simplifies

1 the required education for both customers and utility employees. The introduction
2 of a critical peak rebate rate permits the default applicability of the rate because it
3 essentially eliminates the possibility of higher bills compared with existing rates
4 for all customer participants. Over time, alternative dynamic pricing forms that
5 are more complex could be introduced. My estimated peak demand reductions
6 relate directly to a critical peak rebate form of dynamic pricing.

7 **11. Q: Can the dynamic pricing demand reductions be monetized through the**
8 **existing PJM market?**

9 **A:** Yes, the demand reductions may be used within the existing PJM demand
10 response market which includes both capacity and energy. Forecast demand
11 response reductions can be bid into the PJM Reliability Pricing Model (“RPM”)
12 Base Residual Auction (“BRA”), the RPM incremental auctions, and/or through
13 bilateral agreements. Successful market bids will receive a monthly capacity
14 payment based upon the market clearing price beginning in the PJM delivery
15 year. High existing capacity prices within the Delmarva region provide a
16 significant financial opportunity. Demand response energy market opportunities
17 also exist through the PJM Emergency and Economic Load Response programs
18 for the payment of achieved energy reductions. PJM market earnings will be used
19 to fund the earned critical peak rebates as described in Mr. Janocha’s testimony.

20 **12. Q: Are there other financial benefits that will be obtained through AMI enabled**
21 **dynamic pricing demand reductions?**

22 **A:** Yes, as noted earlier all Delmarva Delaware customers will benefit
23 through the price mitigation of capacity and energy resources. The Company is

1 working with PJM representatives to calculate the achieved price mitigation effect
2 annually.

3 **13. Q: What are the criteria the companies will use to determine critical peak**
4 **events?**

5 **A:** Critical Peak Events may be called in situations including, but not limited
6 to, when day-ahead LMP prices are higher than normal, during periods of PJM
7 system emergencies, and during local system emergencies. .

8 **14. Q: Does this conclude your testimony?**

9 **A:** Yes it does.