BEFORE THE MARYLAND PUBLIC SERVICE COMMISSION

CASE NO. 9207

IN THE MATTER OF

DELMARVA POWER AND LIGHT COMPANY

REQUEST FOR THE DEPLOYMENT OF ADVANCED METER INFRASTRUCTURE

DIRECT TESTIMONY OF J. RICHARD HORNBY

ON BEHALF OF THE

MARYLAND OFFICE OF PEOPLE'S COUNSEL

JUNE 16, 2011

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EXHIBITS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, EMPLOYER, AND PRESENT POSITION.

A. My name is James Richard Hornby. I am a Senior Consultant at Synapse Energy Economics, Inc., 485 Massachusetts Avenue, Cambridge, MA 02139.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of the Maryland Office of People's Counsel ("OPC").

Q. PLEASE DESCRIBE SYNAPSE ENERGY ECONOMICS.

A. Synapse Energy Economics ("Synapse") is a research and consulting firm specializing in energy and environmental issues, including: electric generation, transmission and distribution system reliability, market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Q. PLEASE SUMMARIZE YOUR WORK EXPERIENCE AND EDUCATIONAL BACKGROUND.

A. I am a consultant specializing in planning, market structure, ratemaking, and gas supply/fuel procurement in the electric and gas industries. Over the past twenty years, I have presented expert testimony and provided litigation support on these issues in more than 120 proceedings in over thirty jurisdictions in the United States and Canada. Over this period, my clients have included staff of public utility commissions, state energy offices, consumer advocate offices and marketers.

Prior to joining Synapse in 2006, I was a Principal with CRA International and, prior to that, Tabors Caramanis & Associates. From 1986 to 1998, I worked with the Tellus Institute (formerly Energy Systems Research Group), initially as Manager of the Natural Gas Program and subsequently as Director of their Energy Group. Prior to 1986, I was Assistant Deputy Minister of Energy for the Province of Nova Scotia.

I have a Master of Science in Energy Technology and Policy from the Massachusetts Institute of Technology ("MIT") and a Bachelor of Industrial Engineering from the Technical University of Nova Scotia, now merged with Dalhousie University. I have attached my resume to this testimony as Exhibit___(JRH-1).

Q. PLEASE SUMMARIZE YOUR EXPERIENCE WITH THE ECONOMICS OF, AND RATEMAKING FOR, ADVANCED METER INFRASTRUCTURE ("AMI") PROJECTS SUCH AS THE AMI DEPLOYMENT PROPOSED BY DELMARVA POWER AND LIGHT COMPANY.

A. Since 2008 I have submitted testimony regarding proposed AMI and smart grid projects in Maryland, Case Nos. 9207 and 9208,[1] as well as in Maine, Pennsylvania, Texas and Arkansas. I have reviewed proposed projects for clients in New Jersey, the District of Columbia and Nevada.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. Delmarva Power and Light Company ("Delmarva" or "Company") filed Direct Testimony dated May 2, 2011 presenting their Amended Business Case for the deployment of AMI.[2] Their testimony responds to Maryland Public Service Commission ("Commission") Order No. 83571 ("Order") in this docket.

OPC retained Synapse to assist in its review of the Company's Amended Business Case. My testimony addresses the projected costs and benefits of the Company's AMI proposal. Specifically, my testimony responds to the Direct Testimony of Delmarva witnesses Lefkowitz, Sunderhauf and Janocha.

Q. WHAT DATA SOURCES DID YOU RELY UPON TO PREPARE YOUR TESTIMONY AND EXHIBITS?

[1] Case No. 9207, OPC Exhibit ("Ex.") 4 – 6; Case No. 9208, OPC Ex. 5 – 6.
[2] See ML#130917.

A. I relied primarily on the Amended Business Case as well as the Direct Testimony and exhibits of the Company's witnesses. I also relied upon the Company's responses to various data requests ("DR"), certain of which I have included in Exhibit___(JRH-5). In addition, I relied upon analyses of the PJM wholesale market for capacity and various reports on AMI and dynamic pricing.

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATION REGARDING THE PROJECTED TOTAL BENEFITS AND COSTS OF THE COMPANY'S AMI PROPOSAL.

A. My first conclusion is that the AMI project will not be cost-effective if the actual amount of customer supply savings from reductions in peak load are significantly less than the Company is projecting. This conclusion is based on the fact that Delmarva is projecting its operational savings will offset only 50 percent of the projected cost of the AMI project.

My second conclusion is that the actual amount of customer supply savings from reductions in peak load, which Delmarva is projecting will occur in response to a new critical peak rebate ("CPR") rate offering, will be much less than the Company is projecting. This conclusion is based upon the results of my analyses which indicate that actual avoided capacity costs are very likely to be lower than the Company has assumed and actual residential customer participation in the CPR will be lower than the Company has assumed. Specifically, actual levels of avoided capacity costs are very likely to be much lower than the Company's projection of $115 per kw-year on average during the 10

year post-deployment period (2014 – 2023) and the actual percentage of residential customers who participate in the CPR during that period will be lower than the Company's projection of 75%.

Based upon those two conclusions, I recommend that the Commission determine that the Company's proposed AMI project is not cost-effective. Accordingly, I recommend that the Commission reject this proposal.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATION REGARDING THE COMPANY'S PROPOSAL FOR MONETIZING REDUCTIONS IN PEAK DEMAND RESULTING FROM ITS CRITICAL PEAK REBATE (CPR).

A. My first conclusion is that the Company has not provided sufficient details of the strategy it intends to use in order to monetize reductions in peak demand resulting from its CPR, and thus has not provided the "detailed plan" requested by the Commission in the Order (Order No. 83571, p. 46). My second, related conclusion is that ratepayer savings will be lower than the Company has projected if Delmarva does not bid one hundred percent of the demand reductions they are projecting from CPR into the PJM forward capacity market Base Residual Auctions ("BRA").

In the event that the Commission rejects the AMI deployment proposal, I recommend that the Commission likewise reject the CPR proposal. Alternatively, if the Commission decides to authorize deployment, I recommend that the Commission not approve the CPR as proposed, and instead require the Company to provide the details of its proposed strategy for monetizing reductions in peak demand resulting from its CPR in accordance with Order No. 83571.

III. DELMARVA AMENDED BUSINESS CASE

Q. PLEASE EXPLAIN WHY DEMARVA SUBMITTED AN AMENDED BUSINESS CASE FOR ITS PROPOSED AMI PROJECT.

A. On December 14, 2010 Delmarva submitted an Amended Business Case in response to Commission Order No. 83571 in this proceeding.[3] That Order directed Delmarva to submit "…an updated and modified business case and associated benefits-to-cost analysis that demonstrates the cost-effectiveness of the Proposal" (Order No. 83571, p. 45). The Order listed eight specific changes from the Company's original Business Case that the Commission expected Delmarva to reflect, at a minimum, in its updated Business Case (Order No. 83571, pp. 45 – 46).

Q. DOES DELMARVA'S AMENDED BUSINESS CASE REFLECT THE EIGHT CHANGES SPECIFIED IN ORDER NO. 83571?

A. Yes.

Q. PLEASE SUMMARIZE DELMARVA'S AMENDED BUSINESS CASE.

A. Delmarva witness Lefkowitz summarizes the Company's amended Business Case for the 10 year post-deployment period, 2014 – 2023. She and Delmarva witness Sunderhauf describe the changes Delmarva has made to its Original Business Case in order to develop the Amended Business Case. Delmarva witness Janocha presents the detailed projection of annual AMI project costs and savings underlying those summary results.

Ms. Lefkowitz presents a summary of Mr. Janocha's year by year projections in Table I of her Direct Testimony (Lefkowitz Direct, p. 4). That Table reports these annual projected costs and benefits as present value revenue requirements ("PVRR"). The Company presents these projected costs and benefits from a system-wide perspective,

[3] See ML#127365.

i.e., regardless of which ratepayers in each rate class pay for which costs and which ratepayers in each rate class receive which benefits. The Table expresses the cost-effectiveness of the AMI project as a Total Resource Cost ("TRC") benefit-to-cost ratio.[4]

Q. PLEASE SUMMARIZE THE COMPANY'S PROJECTION OF BENEFITS FROM THE AMI PROJECT.

A. The Company is projecting two major categories of benefits, energy delivery operating benefits and customer savings in reductions in peak load. My testimony in the initial phase of this proceeding characterizes these two categories as AMI benefits and AMI-enabled dynamic pricing benefits. In this testimony I refer to these two categories of benefits as operational savings and customer supply-side savings to be consistent with the term the Commission has used in Order No. 83571.

The projected energy delivery operating benefits are operational savings the Company expects to achieve in various categories of distribution service O&M expenses. These projected operational benefits have a PVRR of $40.3 million, producing a benefits-to-cost ratio of approximately 0.5. Thus the Company's projected energy delivery operating benefits, in the absence of any other projected benefits, are not sufficient to justify the project.

The projected customer savings in reductions in peak load are savings in supply costs which consist of avoided capacity costs, avoided energy costs and price mitigation. The Company is projecting these benefits to be $55.6 million, of which about 95% or $52.9 million are projected avoided capacity costs. The Company assumes it will be able to avoid capacity and energy costs by reducing the quantity of capacity and of energy it purchases from the PJM wholesale market to provide Standard Offer Service ("SOS")

[4] The TRC test compares the total benefits of the Program, regardless of which customers receive which benefits, to the total cost of the Program regardless of which customers pay which costs.

due to reductions in load by ratepayers who respond to the CPR during the 60 hours of highest demand each year.[5] The Company assumes it will achieve additional supply cost savings as a result of the market price mitigation impact of customer reductions in load. The Company assumes those reductions in load will place downward pressure on prices for capacity and energy in the wholesale markets operated by PJM.

Q. DOES THE AMENDED BUSINESS CASE INDICATE THAT THE AMI PROJECT WILL BE LESS COST-EFFECTIVE AND WILL HAVE LESS MARGIN FOR ERROR THAN THE COMPANY HAD PROJECTED UNDER THE ORIGINAL BUSINESS CASE?

A. Yes. The Company is projecting the AMI project to have a benefits-to-cost ratio of 1.196 under the Amended Business Case compared to 1.669 under the Original Business Case (Lefkowitz Direct, Table I, p. 4). Those results indicate that the AMI project is less cost-effective under the Amended Business Case.

The Company's projections also indicate that there is less margin for error in the Company's projections of the benefits of the AMI project than under the Original Business Case. First, the Company's benefits-to-cost ratio is not only lower than under its Original Business Case, but it is also substantially lower than the benefits-to-cost ratios claimed by Potomac Electric Power Company ("Pepco") and Baltimore Gas and Electric Company ("BGE") for their AMI projects. The benefits-to-cost ratios claimed for those AMI projects after DOE funding were 2.696 (Order No. 83571, p. 38) and 3.2 (Order No. 83410, p. 6) respectively.

[5] Delmarva does not intend to offer customers who purchase their electricity from electricity suppliers the opportunity to earn a bill credit under the Company's CPR Rate; Response to OPC DR 9-10. Additionally, as of April 2011, 8% of Delmarva's residential customers are served by electric suppliers; Commission Electric Choice Enrollment Monthly Report for Month Ending April, 2011; Available at: http://webapp.psc.state.md.us/Intranet/CaseNum/submit_new.cfm?DirPath=\\Coldfusion\Electric Choice Reports\\2011 Electric Choice Enrollment Reports&CaseN=Electric Choice Enrollment Monthly Reports.

Second, the Company's projected operational savings would cover only 50 percent of the cost of the AMI project under the Amended Business Case, i.e., $40.3 million out of $80.1 million (Lefkowitz Direct, Table I, p. 4). Again, that level of operational savings is lower than under its Original Business Case and lower than under Pepco's Business Case for its AMI project. In its Original Business Case, the Company had projected its operational savings would cover 76 percent of the cost of the AMI project (Order No. 83571, p. 43). Pepco projected its operational savings would cover 82 percent of its AMI project costs after DOE funding (Order No. 83571, p. 43).

Q. DID THE COMPANY INCLUDE AN UPDATED ANALYSIS OF UNCERTAINTY ASSOCIATED WITH THOSE PROJECTIONS AS PART OF ITS AMENDED BUSINESS CASE?

A. No. In particular the Company did not provide an updated analysis of the uncertainty associated with its projections of customer supply cost savings from reductions in peak demand. In Order No. 83571 the Commission noted that projected customer supply cost savings represented the majority of the benefits Pepco and Delmarva were expecting from their AMI projects, and those savings projections were based upon Company assumptions regarding the extent to customers would be motivated to reduce their electricity use during critical peak periods. (Order No. 83571, pp. 2, 33, 41, 42). The Commission stated that the foundation for the Company's predictions was far from certain.

IV. SENSITIVITY ANALYSIS OF DELMARVA AMENDED BUSINESS CASE

Q. DOES YOUR ANALYSIS OF THE AMENDED BUSINESS CASE INDICATE THAT THE TOTAL PROJECTED BENEFITS OF DELMARVA'S AMI PROJECT ARE LIKELY TO BE GREATER THAN ITS TOTAL PROJECTED COSTS?

A. No. My analysis, described below, indicates that the projected total benefits of Delmarva's AMI project will be well below its projected total costs. Specifically, the Company is projecting an unrealistically high amount of customer savings from reductions in peak load. That projection is driven primarily by its assumptions regarding customer participation or "engagement" in CPR and future PJM capacity prices. The Company is assuming 75 percent participation by residential ratepayers in its proposed CPR and an average calendar year PJM capacity price of $115 per kw-yr during the post-deployment period, 2014 to 2023. Neither assumption is reasonable. If one uses reasonable assumptions for those two key inputs the projected amounts of ratepayer savings are much lower. Based upon those lower savings the Company's AMI project is not cost-effective.

Q. PLEASE SUMMARIZE THE METHOD YOU USED TO PREPARE YOUR SENSITIVITY ANALYSIS OF DELMARVA'S AMENDED BUSINESS CASE.

A. My analysis started with Delmarva's Amended Business Case, including its projected revenue requirements and the 10 year post-deployment period. I developed alternative estimates of customer savings in reductions in peak load for three sensitivity cases, "Capacity Prices per Delmarva Original Filed Benefits," "Forty Percent Participation in CPR," and a "Capacity Prices per Delmarva Original Filed Benefits + Forty Percent

Participation in CPR."

The summary results of my analysis are illustrated in the bar chart below, which is attached as page 1 of Exhibit__(JRH-2).

a. The first bar from the left is the projected total cost of the AMI project per the Amended Business Case (solid fill);

b. The second bar from the left is the projected total benefits of the project by category per the Amended Business Case. The categories are energy delivery operating benefits (diagonal), customer savings from avoided capacity costs (solid) and customer savings from avoided energy costs plus price mitigation (diamond);

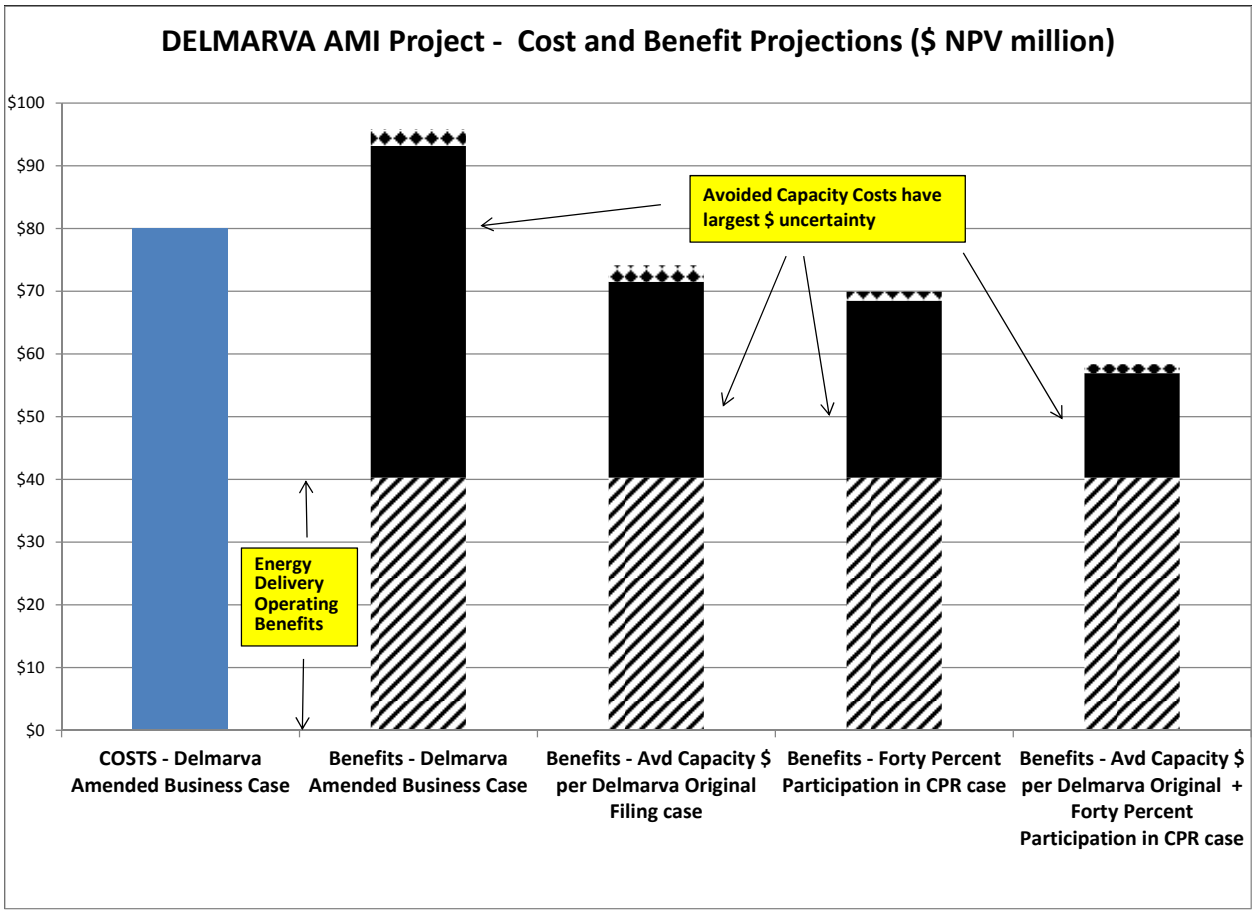
c. The third bar from the left is my projection of the total benefits of the AMI Project under the Capacity Prices per Delmarva Original Filed Benefits sensitivity case. The projected PJM capacity prices Delmarva used in its Original Business Case for calendar years 2014 through 2023 are approximately 41% lower than the projected PJM capacity prices underlying its Amended Business Case, i.e., $68 per kw-yr on average versus $115 per kw-year.[6] The benefits shown in the bar for this case, when compared to the costs shown in the first bar, illustrate that the project would not be cost-effective at these lower levels of avoided capacity costs.

d. The fourth bar from the left is my projection of AMI project total benefits for the Forty Percent Participation in CPR case. It assumes a 40 percent ratepayer participation in the CPR, approximately 47% lower than the 75 percent Delmarva assumes in its Amended Business Case. The benefits shown in the bar for this

[6] Expressed in constant 2009$ the corresponding calendar year values are $54 per kw-yr and $91 per kw-yr respectively.

case, when compared to the costs shown in the first bar, illustrate that the project would not be cost-effective at this lower levels of ratepayer participation.

e. The fifth bar from the left is my projection of AMI project total benefits for a combination of the prior two sensitivity cases, i.e. a Capacity Prices per Delmarva Original Filed Benefits + Forty Percent Participation in CPR case. The benefits shown in the bar for this case, when compared to the costs shown in the first bar, illustrate that the project would not be cost-effective at these lower levels of participation and capacity costs.



Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSIS AND EXPLAIN HOW THEY RELATE TO THE PROJECTIONS IN TABLE I OF MS. LEFKOWITZ'S DIRECT TESTIMONY.

A. The summary values from my analysis are presented in the table below, which is attached as page 2 of Exhibit___(JRH-2). The values that differ from Delmarva's analysis are shaded. The table presents Delmarva's Amended Business case in column a. It then presents the results from my three sensitivity cases in columns b through d respectively. For each of those cases I present the benefit-to-cost ratio in row 6.

- Delmarva's Amended Business Case has a benefit to cost ratio of 1.196 (column a, row 6);
- The Capacity Prices per Delmarva Original Filed Benefits case has a benefit to cost ratio of 0.926 (column b, row 6) which means that case would not be cost-effective;
- The Forty Percent Response to CPR case has a benefit to cost ratio of 0.873 (column c, row 6), again indicating that case would not be cost-effective; and
- The Capacity Prices per Delmarva Original Filed Benefits + Forty Percent Response to CPR case has a benefit-to-cost ratio of 0.729 (column d, row 6) also indicating that case would not be cost-effective.

Delmarva AMI Project - Cost and Benefit Projections ($ NPV million)					
Category		Delmarva Amended Business Case	Sensitivity Case - Capacity Costs per Delmarva Original Filed Benefits	Sensitivity Case - Forty Percent Participation in Critical Peak Rebate (CPR)	Sensitivity Case - Capacity Costs per Delmarva Original Filed Benefits + Forty Percent Participation in CPR
		a	b	c	d
Projected Cost(PVRR)	1	$ 80.1	$ 80.1	$ 80.1	$ 80.1
Projected Energy Delivery Operating Benefits (PVRR)	2	$ 40.3	$ 40.3	$ 40.3	$ 40.3
Projected Customer Savings in Reductions in Peak Load (PVRR)					
Avoided Capacity costs	3	$ 52.9	$ 31.2	$ 28.2	$ 16.6
Avoided Energy costs + Price Mitigation	4	$ 2.7	$ 2.7	$ 1.4	$ 1.4
Projected Benefits and Savings (PVRR)	5 = 3 + 4	$ 95.9	$ 74.2	$ 69.9	$ 58.4
Ratio of Projected Benefits and Savings PVRR to Projected Cost PVRR	6 = 5 / 1	**1.196**	**0.926**	**0.873**	**0.729**

A. CAPACITY PRICES PER DELMARVA ORIGINAL FILED BENEFITS CASE

Q. PLEASE SUMMARIZE THE COMPANY'S ASSUMPTION REGARDING ANNUAL PJM CAPACITY PRICES DURING THE 10 YEAR POST-DEPLOYMENT PERIOD AND ITS SUPPORT FOR THAT ASSUMPTION.

A. Company witness Sunderhauf indicates that the 10 year average value of capacity in the PJM Delmarva zone has increased by approximately 70% compared to the Company's last analysis, from $53 per kw-year to $81 per kw-year (Sunderhauf Direct, p. 5). He states that the increase in this value, represented by the net cost of new entry ("CONE"),

is due to heavily constrained transmission and limited supply in that zone (Sunderhauf Direct, p. 9).

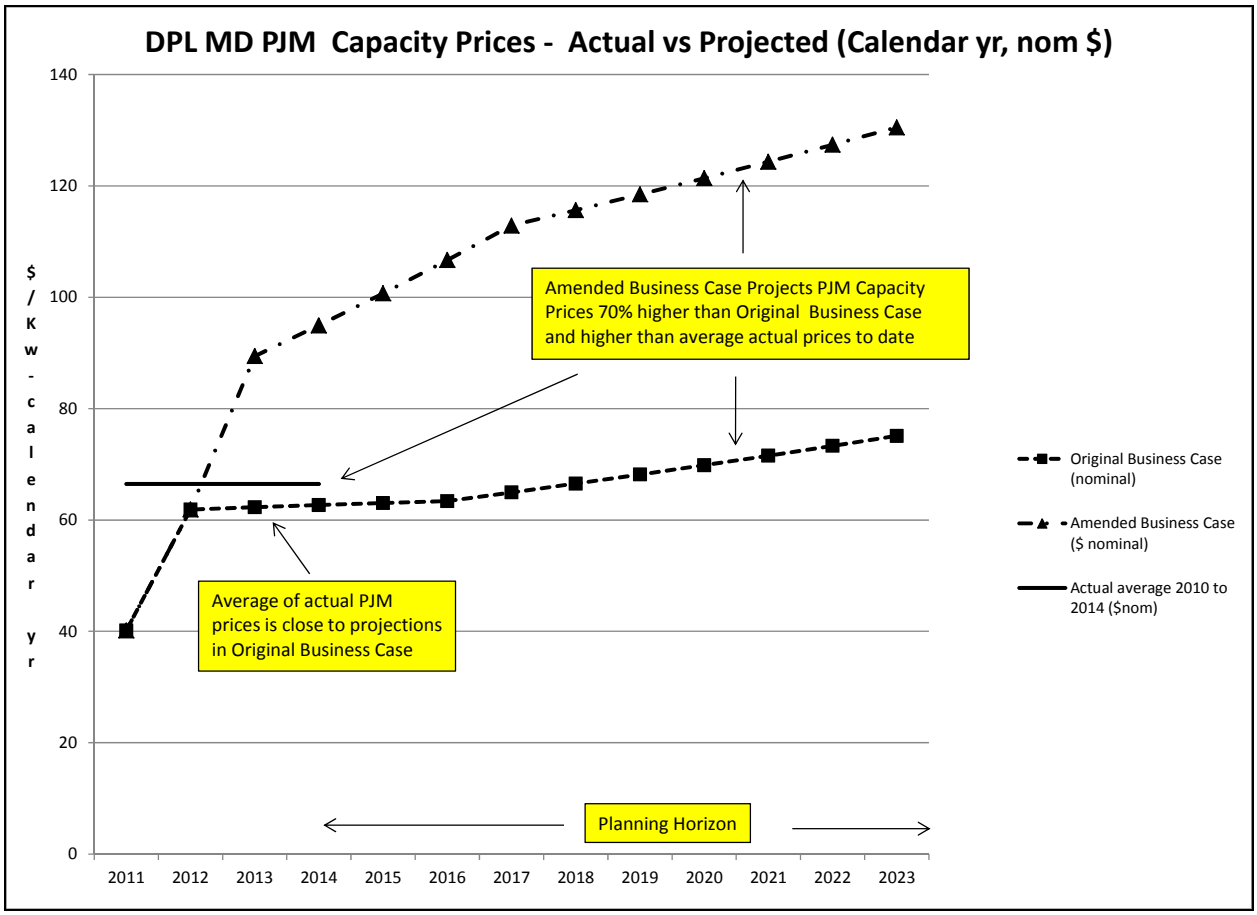
According to its responses to OPC Data Requests 9-11 and 9-17, the Company's support for its position regarding future prices of PJM capacity consists of the following materials:

- 2009 PJM State of Market capacity report;
- Base Residual Auction ("BRA") results for 2013-2014;
- Net CONE prices for 2012-2013 and 2013-2014 respectively; and
- Brattle Group workpapers that report estimates of PJM capacity values Brattle prepared in 2009 ("Brattle 2009") and in 2010 ("Brattle 2010") respectively.

Q. BEFORE ANALYZING THE COMPANY'S POSITION PLEASE DESCRIBE THE ANNUAL PJM CAPACITY PRICES IT USED DURING THE 10 YEAR POST-DEPLOYMENT PERIOD TO ESTIMATE THE SAVINGS FROM REDUCTIONS IN PEAK DEMAND.

A. The simple average of the annual PJM prices the Company used to estimate savings from reductions in peak demand during the 10 year post-deployment is $115 per kw-yr as compared to the $81 per kw-yr Mr. Sunderhauf reports in his testimony. The projections of year by year prices are plotted in the chart below, which is attached as Exhibit___(JRH-3), page 1.

The Company did derive the annual PJM prices it used to estimate savings during the 10 year post-deployment from the Brattle 2010 prices to which Mr. Sunderhauf refers. The prices it used are higher because they are reported in nominal $ rather than $2009 and they are for the period 2014 through 2023 rather 2011 through 2020.



Q. PLEASE PROVIDE THE BASIS FOR YOUR POSITION THAT THE COMPANY'S PROJECTION OF ANNUAL PJM CAPACITY PRICES DURING THE 10 YEAR POST-DEPLOYMENT PERIOD IS NOT REASONABLE.

A. My position that the Company's projection of average annual PJM capacity prices during the 10 year post-deployment period is not reasonable is based on several facts.

First, the Company has not provided detailed analyses or projections that support its position. For example, the Company did not state that the Brattle 2010 projections of PJM capacity prices are based upon a simulation of the PJM energy and capacity markets over that period nor did the Company provide such a simulation in response to OPC Data Requests 9-11 or 9-17. The Company referred to the capacity market section of the 2009 State of the Market Report for PJM. That section does not present a projection or

analysis of electric load and supply in the Delmarva Peninsula over the ten year post-deployment period. Moreover, the 2009 State of the Market Report for PJM was published in March 2010, and there are more recent versions of that report available as well as more relevant recent reports such as the PJM 2010 Regional Transmission Expansion Plan ("RTEP") published in February 2011 to which the Company could have referred but did not.

Second, the Company did not discuss or analyze the PJM capacity market fundamentals that I presented in Exhibit____ (JRH-6) of my Direct Testimony filed in this proceeding on October 20, 2009.[7] As I will discuss further below, one major development since I prepared the October 2009 Exhibit is the expectation of reductions in existing capacity over the next several years due to retirements of older coal-fired units in response to the recent and impending changes to air and water emission regulations by the Environmental Protection Agency ("EPA"). A potentially offsetting new development is the proposal by New Jersey to build peaking units in order to place downward pressure on PJM capacity prices.

Third, the results of the 2014-2015 BRA, when averaged with the other four BRAs since 2010-2011, indicate that prices have averaged approximately $66 per kw-yr. As indicated in my chart of PJM capacity prices, Exhibit ___(JRH-3) page one, that actual average has been very close to the nominal projections the Company used in its Original Business Case.

Q. PLEASE DESCRIBE THE ASSUMPTION YOU USED IN YOUR SENSITIVITY CASE AND THE BASIS FOR THAT ASSUMPTION.

[7] Case No. 9207, OPC Ex. 4.

A. As its name implies, my *Capacity Prices per Delmarva Original Filed Benefits* sensitivity case uses the Company's projection of annual PJM capacity prices from its Original Business Case. The simple average of the projected annual PJM prices during the 10 year post-deployment under that Case is $68 per kw-yr in nominal dollars. The projections of year by year prices are plotted in the chart of PJM capacity prices presented earlier and in Exhibit___(JRH-3) page 1.

This assumption regarding PJM capacity prices is higher than the values I tested in my sensitivity analyses of the Pepco Business Case and of the BGE Business Case in the Direct Testimonies I filed in Cases 9207 and 9208. I am proposing to test a higher projection of PJM capacity prices for Delmarva because it is consistent with the trend in actual prices and because of the potential impact of retirements of existing capacity.

We now have two more years of actual BRA results upon which to assess the trend in actual prices. As noted earlier, the average of the past five BRA auctions for the Delmarva zone is $66 per kw-yr. As an indication of the views of other stakeholders regarding future PJM prices, Jersey Central Power and Light ("JCP&L"), which operates in the same PJM zone as Delmarva, Eastern MAAC, recently entered into a stipulation with Staff of the New Jersey Board of Public Utilities and the State of New Jersey Division of the Rate Counsel in which it agreed to use an average avoided PJM capacity cost of $166 per Mw-day, which equates to $60.60 per kw-yr.[8]

My October 2009 analysis of PJM capacity market fundamentals that would cause the market price of wholesale capacity to be less than net CONE did not consider reductions in existing capacity due to retirements of older coal-fired units in response to changes to EPA air and water emission regulations. Thus, while I continue to believe

[8] New Jersey Board of Public Utilities. Docket ER100100034. Stipulation of Settlement. May 6, 2011. Revised Attachment B, p. 1 of 5.

that lower load growth, increased utilization of existing capacity due to reduction in transmission constraints and capacity additions from renewable resources will tend to place downward pressure on PJM capacity prices, I now recognize that retirements of older coal-fired units will place upward pressure on those prices in response to the recent and impending changes to air and water emission regulations by the EPA. For example, in August 2009 I led a team that projected long-term avoided wholesale capacity costs in New England for a Reference Case in which there would be no new efficiency programs from 2010 onward. That report projected wholesale capacity prices would not rise much above $2 per kw-month, i.e. $24 per kw-yr.[9] Currently I am leading an update of that report and we are now projecting that wholesale capacity prices assuming no new efficiency from 2012 could rise to $7 per kw-month, i.e., $84 per kw-yr by 2023. The increase in projected wholesale capacity prices in the outer years is primarily attributable to projected retirements of older existing capacity in response to recent and impending changes in EPA regulations of generating unit emissions.

B. LOWER RESPONSE TO CPR CASE

Q. PLEASE SUMMARIZE THE COMPANY'S ASSUMPTION REGARDING RESIDENTIAL CUSTOMER PARTICIPATION IN THE CPR AND ITS SUPPORT FOR THAT ASSUMPTION.

A. The Company is assuming that 75 percent of residential customers on SOS will participate in the CPR rate (Sunderhauf Direct, p. 7). Delmarva's projection of customer savings from participating in the CPR assumes two different levels of reductions for average residential customers depending on whether they are on its Direct Load Control

[9] Hornby, Rick et al. *Avoided Energy Supply Costs in New England: 2009 Report.* October 2009. Available from www.synapse-energy.com. Exhibit 6-3.

("DLC") program or not on that program. It assumes average residential participants on the DLC program will reduce demand by 12% (0.23 kwh per hour) during each of the four hours of a critical event and average residential participants not on the DLC program will reduce demand by 23% (0.43 kwh per hour) during the critical event (page 1 of Exhibit___(JRH-4).

According to its response to OPC Data Request 9-13(b), the Company bases its support for this assumed level of participation on the California Statewide pilot and the PRISM modeling tool.

Q. PLEASE PROVIDE THE BASIS FOR YOUR POSITION THAT THE COMPANY'S PROJECTION OF RESIDENTIAL CUSTOMER PARTICIPATION IN THE CPR IS NOT REASONABLE.

A. My position that the Company's projection of residential customer engagement, or participation, in the CPR is not reasonable is based on three facts. First, the CPR will provide the average residential customers very little compensation to reduce his or her peak demand during a critical event. Unless residential customers automate their response to the CPR it is unreasonable to expect high levels of participation. Second, the Company has provided very limited and out-of-date materials to support its assumption of 75 percent residential customer participation in CPR. Third, my review of assumed and actual participation levels for dynamic pricing proposals and pilots does not support an assumption of 75 percent residential customer participation in CPR.

Q. PLEASE DESCRIBE THE COMPENSATION DELMARVA ASSUMES AN AVERAGE RESIDENTIAL CUSTOMER WOULD RECEIVE FROM THE CPR IN EXCHANGE FOR REDUCING PEAK DEMAND.

A. As noted, Delmarva's projection of customer savings from participating in the CPR assumes two different levels of reductions for average residential participants depending on whether they are, or are not, on the DLC program. As compensation for their reductions during a critical event Delmarva is projecting that the average residential customer on DLC would receive $1.17 while the average residential customer not on DLC would receive $2.16. As shown on page 1 of Exhibit___(JRH-4), the $1.17 is the result of multiplying the proposed CPR of $1.25 per kWh by the estimated average residential participant reduction of 0.23 kwh per hour and by 4 hours.

The Company maintains that residential participation in the CPR will be 75 percent because all residential customers will be automatically eligible for the CPR, and thus will not have to "opt-in" to this rate offering. However, the Company's assumption ignores the reality that a customer, in order to benefit from the CPR, will also have to be aware of it[10] and have to be sufficiently motivated to "opt-in" by taking one or more actions during each critical event.

There is no doubt that some percentage of residential customers will do so and thereby participate in the CPR. However, the question is this – what percentage of residential customers will be motivated to learn about and act upon a CPR in exchange for $1.17 per event or $2.16 per event?

Q. HAS THE COMPANY PROVIDED EVIDENCE DEMONSTRATING THAT IT UNDERSTANDS THE FACTORS THAT WILL MOTIVATE RESIDENTIAL CUSTOMERS IN ITS SERVICE TERRITORY TO RESPOND TO THE PROPOSED CPR?

[10] Delmarva witness Sunderhauf stated that customers will receive an automated phone call, email text message, or combination thereof, at the customer's option (Sunderhauf Direct, p. 4) but he also stated that the Company does not guarantee to provide customers with notification prior to a Critical Peak Event, but will make a reasonable attempt to do so (Response to OPC Data Request 9-9(d)).

A. No. The Company has not provided market research or analyses specific to its service territory to support its projection of 75 percent participation in a CPR by its residential customers. In response to data requests the Company could not provide the following market research and analyses relevant to factors that would motivate a residential customer to engage in the CPR:

- The expected reduction in demand per critical peak period, and rebate amount at $1.25 per kWh, a DPL residential customer would achieve from actions during a critical event such as reducing central air conditioning, reducing water heating, reducing use of a window air conditioner or reducing use of an electric stove (Response to OPC Data Request 9-15);
- The annual savings a residential customer in MD would realize at the Company's assumed elasticity's; (Response to OPC Data Request 9-16, Response to AARP Data Request 2-4), or at various levels of response (Response to AARP Data Request 1-10);
- Estimated distribution of reductions per participant corresponding to the average elasticity's from the 2009 BGE results. A distribution of reductions per participant is relevant because other pilots have indicated that a relatively small percentage of participants, e.g. 20 percent, make large reductions and the remaining participants make small reductions (Response to OPC Data Request 9-14); or
- The applicability of results from the BGE pilot to Delmarva's service territory (Response to AARP Data Request 1-7 and 2-2);

Q. PLEASE COMMENT ON THE MATERIALS THE COMPANY HAS PROVIDED AS THE BASIS FOR ITS PROJECTION OF 75 PERCENT RESIDENTIAL PARTICIPATION IN THE CPR?

A. The materials the Company has provided to support its assumption of 75 percent residential customer participation in CPR are out-of-date and of questionable applicability to that assumption.

Contrary to the Company's Response to OPC Data Request 9-13(b), the California Statewide pilot and the PRISM modeling tool provide support for the estimates of elasticity used to project the average reduction in peak demand per residential participant, e.g. the 0.4 kw per customer. However, neither the California Statewide pilot nor the PRISM modeling tool provide any support for the Company's assumed level of residential customer participation in the CPR.

Other than its reference to Pepco's District of Columbia Pilot, the Company has not updated the information regarding customer participation rates it provided with its Original Business Case. The Company did not update that information with reports or results of pilots completed since November 2009.

The material upon which the Company based its Original Business Case participation projections is now over 5 years old. That material consists of two references cited by Company witness Faruqui (Faruqui Reply, pp. 7-9).[11] Dr. Faruqui's first reference was "Customer Preferences Market Research," a 2003 report on customer opinions and attitudes (Responses to OPC Data Request 1-14 and 1-15). As OPC witness Brockway noted in her October 2009 Direct Testimony (Brockway Direct, p. 13), the Customer Preferences Market Research report does not review actual customer participation in either an actual dynamic pricing pilot or system-wide deployment.[12]

Dr. Faruqui's first reference was "Customer Preferences Market Research," a 2003 report on customer opinions and attitudes (Responses to OPC Data Request 1-14

[11] Case No. 9207, PHI Ex. 6.
[12] Case No. 9207, OPC Ex. 3.

and 1-15). As OPC witness Brockway noted in her October 2009 Direct Testimony (Brockway Direct, p. 13), the Customer Preferences Market Research report does not review actual customer participation in either an actual dynamic pricing pilot or system-wide deployment.

Dr. Faruqui's second reference was market research and experience in California on the percentage of residential customers who opted-out of a Critical Peak Price ("CPP") rate. Dr. Faruqui refers to the discussion of that experience in a June 2009 report by staff of the Federal Energy Regulatory Commission ("FERC").[13] However, that FERC report in turn cites the source of that material as a paper published February 2006, which indicates that the research and experience occurred prior to February 2006.[14] In addition to being several years old, the applicability of this second reference to participation in the CPR is questionable. That paper analyzes the percentage of customers who remain on a CPP rate after they have been participating in that rate during a pilot, i.e., after they have already chosen to engage or participate. The paper does not analyze the percentage of customers who, when they wake up some morning to find they are eligible to participate in the CPR, will actually choose to engage or take any action during critical peak events.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR REVIEW OF PARTICIPATION LEVELS ASSOCIATED WITH DYNAMIC PRICING PROPOSALS AND PILOTS.

A. The results of my review of dynamic pricing proposals and pilots, described below, do not support the Company's assumption of 75 percent residential customer participation in CPR.

[13] *A National Assessment of Demand Response Potential*, Federal Energy Regulatory Commission, June 2009, p. 62.
[14] Dean Schultz and David Lineweber, *Real Mass Market Customers React to Real Time-Differentiated Rates: What Choices Do they make and Why?* 16th National Energy Services Conference, San Diego, CA. February 2006.

Q. DO LEADING PROPONENTS OF DYNAMIC PRICING ACKNOWLEDGE THE DIFFFICULTY OF DETERMINING HOW TO MOTIVATE CUSTOMERS TO TAKE SERVICE UNDER DYNAMIC PRICING?

A. Yes. Leading proponents of dynamic pricing acknowledge that projecting levels of participation in dynamic rates is difficult. They also acknowledge that the electric industry has not conducted sufficient research into approaches for motivating customers to take service under a dynamic pricing tariff, i.e. to engage or participate. For example, earlier in this proceeding Company witness Faruqui agreed with OPC witness Brockway that participation rates were more difficult to forecast than kW-impact per customer (Faruqui Reply, p. 8).[15]

Last October, in Direct Testimony to support a "test and learn" approach to dynamic rates proposed by PECO Energy Company, Dr. Stephen George stated that despite the 17 dynamic pricing pilots discussed in the Direct Testimony of Dr. Faruqui in the PECO proceeding:

> *Without a doubt, the most important issue requiring more investigation is understanding the best way to get customers to sign up for time-varying rates. This is an understudied area that is vitally important to designing good pricing policies and to implementing successful pricing and demand response programs. Predicting the aggregate impact of dynamic tariffs and other demand response programs requires estimates of the average response associated with customers who enroll in these programs* ***as well as estimates of the number of customers who are likely to enroll. The 17 pilot programs mentioned above have focused almost exclusively on estimating average dynamic rate impacts and hardly at all***

[15] Case No. 9207, PHI Ex. 6.

on understanding customer preferences for such rates and how to effectively enroll consumers in these programs.[16]

Q. ARE THE ACTUAL LEVELS OF RESIDENTIAL PARTICIPATION IN TIME-VARYING RATES SUCH AS CPR ANYWHERE NEAR THE 75 PERCENT LEVEL THAT DELMARVA IS ASSUMING?

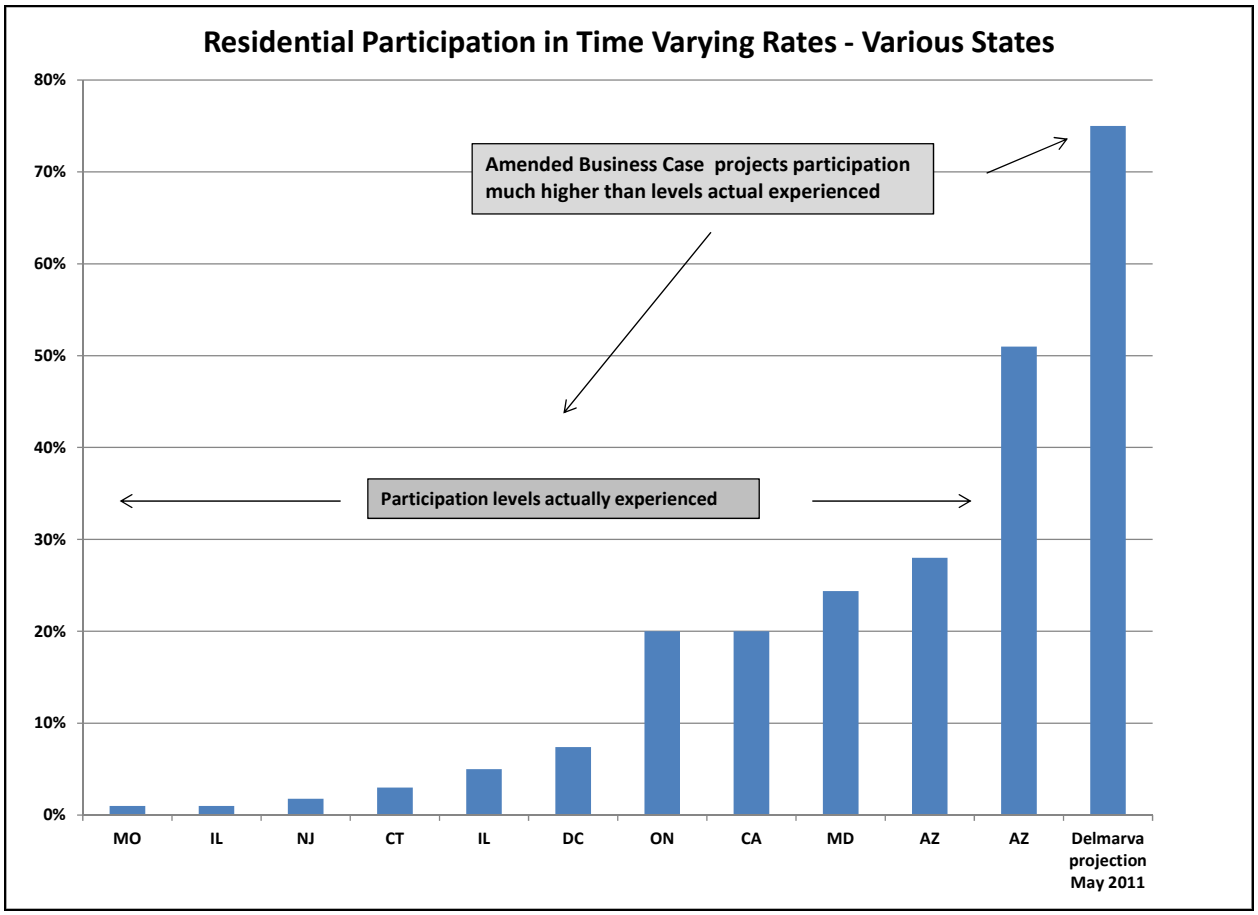
A. No.

I have prepared a review of residential customer participation in a number of dynamic pricing and time-varying rate offerings throughout the U.S. and Canada. These rate offerings include CPR, critical peak pricing (CPP) and time-of-use (TOU). Some data is from pilots while other data is from rates that have been offered on a system-wide basis for many years. I have collected the data for a wide range of time-varying rates because the utilities offering each type of rate must motivate their residential customers to engage in that rate. In addition, proponents of dynamic pricing have pointed to the high levels of participation in time-of-use achieved by two Arizona utilities as an indication of the levels that can be achieved after a long enough number of years.

The results of my review are plotted in the chart below which is attached as page 2 of Exhibit___(JRH-4). Those results indicate residential participation levels in time-varying rates such as CPR and CPP are most commonly less than 10 percent. There are a few examples of residential participation levels in the 10 to 25 percent range. Only one utility is reported to have residential participation of approximately 51 percent. Thus, Delmarva's projected participation of 75 percent is 50 percent higher than the highest actual participation identified in my review, i.e., Arizona Public Service with 51 percent

[16] Pennsylvania Public Utility Commission, Docket No. M-2009-2123944, PECO Energy Company Statement No. 2, Direct Testimony of Dr. Stephen S. George, October 28, 2010, p. 6. *(Emphasis added).*

residential participation in time-of-use rates, and approximately 200 percent higher than the next highest levels of residential participation levels in time-varying rates.



Q. PLEASE DESCRIBE THE ASSUMPTION YOU USED IN YOUR SENSITIVITY CASE AND THE BASIS FOR THAT ASSUMPTION.

A. As its name implies, my Forty Percent Participation in CPR sensitivity case assumes 40 percent residential participation rather than 75 percent.

This is essentially the same level of participation that I tested in my sensitivity analyses of the Pepco Business Case and of the BGE Business Case in the Direct Testimonies I filed in Cases 9207 and 9208.[17] In addition, this level of participation is approximately equal to the average of two of the highest participation rates achieved for

[17] Case No. 9207, OPC Ex. 4; Case No. 9208, OPC Ex. 5.

an optional residential rate offering by U.S. utilities. Arizona Public Service and Salt River Project have each been offering time-of-use rates to residential customers and have achieved participation rates of approximately 51% and 28% respectively.[18] Dr. Faruqui and other Delmarva witnesses have pointed to the experience of Salt River Project with TOU rates as a model of a utility with a high level of participation and sustained reductions per participant (Faruqui Reply, p. 6).[19]

C. OTHER POTENTIAL CONSIDERATIONS

Q. HAS DELMARVA STATED THAT IT MUST BEGIN, OR COMPLETE, DEPLOYMENT OF ITS AMI PROJECT IN ORDER TO COMPLY WITH EXTERNAL OR AN INTERNAL DEADLINE?

A. No. First, Delmarva is not proposing to start installing smart meters until September 2012 (Lefkowitz Direct, p. 6). Second, unlike Pepco and BGE, Delmarva is not under external time pressure to begin or complete its AMI project by a certain date in order to receive DOE Funds. Third, Delmarva has not stated that it must implement its AMI project in order to coordinate deployment in its Maryland service territory with deployment in its Delaware service territory. Thus, Delmarva has the flexibility to postpone implementation until the economics of its AMI project improve to the point where it will be cost-effective.

Q. DO THE BENEFITS THE COMPANY HAS NOT QUANTIFED OFFSET THE LIKELIHOOD THAT ACTUAL MONETARY BENEFITS WILL BE LESS THAN THE ACTUAL COSTS OF THE AMI PROJECT?

[18] Pennsylvania Public Utility Commission, Docket No. M-2009-2123944, PECO Energy Company Statement No. 2-R, Rebuttal Testimony of Dr. Stephen S. George, January 11, 2011, p. 6.
[19] Direct Testimony of Charles Dickerson, Delaware Public Service Commission, Docket 09-311, p. 8.

A. No. Company witnesses Lefkowitz and Sunderhauf each refer to several categories of benefits from AMI that the Company has not quantified. These categories include environmental benefits, support for renewable energy, support for electric vehicles and increased energy conservation. The reference to these benefits implies that, if quantified, they would be material. Until the Company actually quantifies each of these benefits in some manner, in physical terms if not in monetary terms, which would place them into context, I recommend that the Commission not give them any weight.

D. MONETIZATION OF REDUCTIONS IN PEAK DEMAND FROM CPR

Q. DOES THE COMPANY HAVE THE ABILITY TO MONETIZE DEMAND REDUCTIONS FROM CPR BY PARTICIPATING IN PJM'S WHOLESALE CAPACITY AND ENERGY MARKETS?

A. Yes. The Company has the ability to monetize reductions in peak demand resulting from its CPR in the PJM wholesale capacity market. Currently it has the ability to bid forecast reductions for a future PJM power year, which runs June through May, into either the BRA for that power year or one of the Incremental Auctions held for that year. PJM conducts the BRA for a given power year approximately 36 months in advance of that power year. For example in May 2011 it conducted the BRA for 2014/2015. Once a demand reduction is bid into a BRA the bidder must provide that reduction in the power year or face a financial penalty. PJM conducts the Incremental Auctions at scheduled intervals in advance of the power year.

Q. HAS THE COMMISSION DIRECTED DELMARVA TO SUBMIT A PLAN DETAILING ITS PROPOSED STATEGY FOR MONETIZING DEMAND REDUCTIONS AND ENERGY USE REDUCTIONS ATTRIBUTABLE TO AMI?

A. Yes. The Commission has directed both Delmarva and Pepco to submit "…a detailed plan regarding the manner in which they intend to monetize their projected AMI-enabled peak demand and energy savings in the PJM capacity and energy markets" (Order No. 83571, p. 46).

Q. HAS DELMARVA PROVIDED THE DETAILS OF ITS PROPOSED STATEGY FOR MONETIZING DEMAND REDUCTIONS FROM ITS CPR?

A. No. The materials that Delmarva has provided in this proceeding do not constitute a "detailed plan."

First, none of the Company witnesses Direct Testimonies discuss Delmarva's proposed strategy for monetizing peak demand reductions. Second, Delmarva's responses to AARP Data Request AARP 1-4 and OPC Data Request 10-1(b) on this issue have been very vague. For example, the response to AARP 1-4 is:

> The demand reductions will be used within the existing PJM demand response market which includes both capacity and energy. Forecast demand response reductions can be bid into the PJM Reliability Pricing Model ("RPM") Base Residual Auction ("BRA"), the RPM incremental auctions, and/or through bilateral agreements. Successful market bids will receive a monthly capacity payment based upon the market clearing price beginning in the PJM delivery year. High existing capacity prices within the Delmarva region provide a significant financial opportunity. Demand response energy market opportunities also exist through the PJM Emergency and Economic Load Response programs for the payment of achieved energy reductions. Price mitigation impacts for both the PJM capacity and energy market will be achieved as a result of the additional demand resource.

Q. DO YOU EXPECT THE COMPANY TO MONETIZE 100 PERCENT OF ITS DEMAND REDUCTIONS FROM CPR IN THE INITIAL YEARS OF THE POST-DEPLOYMENT PERIOD?

A. No. In order to monetize 100 percent of its demand reductions from CPR the Company would have to bid 100 percent of its forecast reductions for the initial years of its CPR, e.g. 2015 through 2018, into the BRA for each of those power years. I do not expect Delmarva to propose that approach in the initial years because it would be exposed to a financial penalty if actual reductions in the power year from the CPR prove to be less than the reduction it bid into the BRA. The financial risk is highest for the initial years because the Company does not have actual experience with the CPR. I would not expect the Company to bid 100 percent of forecast reductions into those BRAs three years in advance until it has enough experience to accurately predict the actual quantity of reductions.

Q. WOULD THE PROJECTED SAVINGS IN CAPACITY COSTS BE LOWER IF THE COMPANY DID NOT BID 100 PERCENT OF ITS FORECAST DEMAND REDUCTIONS FROM CPR IN THE INITIAL YEARS OF THE POST-DEPLOYMENT PERIOD?

A. Yes.

V. CONCLUSIONS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATION REGARDING THE PROJECTED TOTAL BENEFITS AND COSTS OF THE COMPANY'S AMI PROPOSAL.

A. My first conclusion is that the AMI project will not be cost-effective if the actual amount of customer supply savings from reductions in peak load are significantly less than the Company is projecting. This conclusion is based on the fact that Delmarva is projecting its operational savings will offset only 50 percent of the projected cost of the AMI project.

My second conclusion is that the actual amount of customer supply savings from reductions in peak load, which Delmarva is projecting will occur in response to a new CPR rate offering, will be much less than the Company is projecting. This conclusion is based upon the results of my analyses which indicate that actual avoided capacity costs are very likely to be lower than the Company has assumed and actual residential customer participation in the CPR will be lower than the Company has assumed. Specifically, actual levels of avoided capacity costs are very likely to be much lower than the Company's projection of $115 per kw-year on average during the 10 year post-deployment period (2014 – 2023) and the actual percentage of residential customers who participate in the CPR during that period will be lower than the Company's projection of 75%.

Based upon those two conclusions, I recommend that the Commission determine that the Company's proposed AMI project is not cost-effective. Accordingly, I recommend that the Commission reject this proposal.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATION REGARDING THE COMPANY'S PROPOSAL FOR MONETIZING REDUCTIONS IN PEAK DEMAND RESULTING FROM ITS CPR.

A. My first conclusion is that the Company has not provided sufficient details of the strategy it intends to use in order to monetize reductions in peak demand resulting from its CPR,

and thus has not provided the "detailed plan" requested by the Commission in the Order (Order No. 83571, p. 46). My second, related conclusion is that ratepayer savings will be lower than the Company has projected if Delmarva does not bid one hundred percent of the demand reductions they are projecting from CPR into the PJM forward capacity market BRA.

In the event that the Commission rejects the AMI deployment proposal, I recommend that the Commission likewise reject the CPR proposal. Alternatively, if the Commission decides to authorize deployment, I recommend that the Commission not approve the CPR as proposed, and instead require the Company to provide the details of its proposed strategy for monetizing reductions in peak demand resulting from its CPR in accordance with Order No. 83571.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

LIST OF EXHIBITS

James Richard Hornby

PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA.
Senior Consultant, 2006 to present.
Provides analysis and expert testimony regarding planning, market structure, ratemaking and supply contracting issues in the electricity and natural gas industries.

Charles River Associates (formerly Tabors Caramanis & Associates), Cambridge, MA.
Principal, 2004-2006, *Senior Consultant,* 1998–2004.
Provided expert testimony and litigation support in energy contract price arbitration proceedings and various utility ratemaking proceedings. Managed a major productivity improvement and planning project for two electric distribution companies in Abu Dhabi. Analyzed a range of market structure and contracting issues in wholesale electricity markets.

Tellus Institute, Boston, MA.
Vice President and Director of Energy Group, 1997–1998.
Presented expert testimony on rates for unbundled retail services in restructured retail markets and analyzed the options for purchasing electricity and gas in those markets.
Manager of Natural Gas Program, 1986–1997.
Prepared testimony and reports on a range of gas industry issues including market structure, unbundled services, ratemaking, strategic planning, market analyses, and supply planning.

Nova Scotia Department of Mines and Energy, Halifax, Canada.

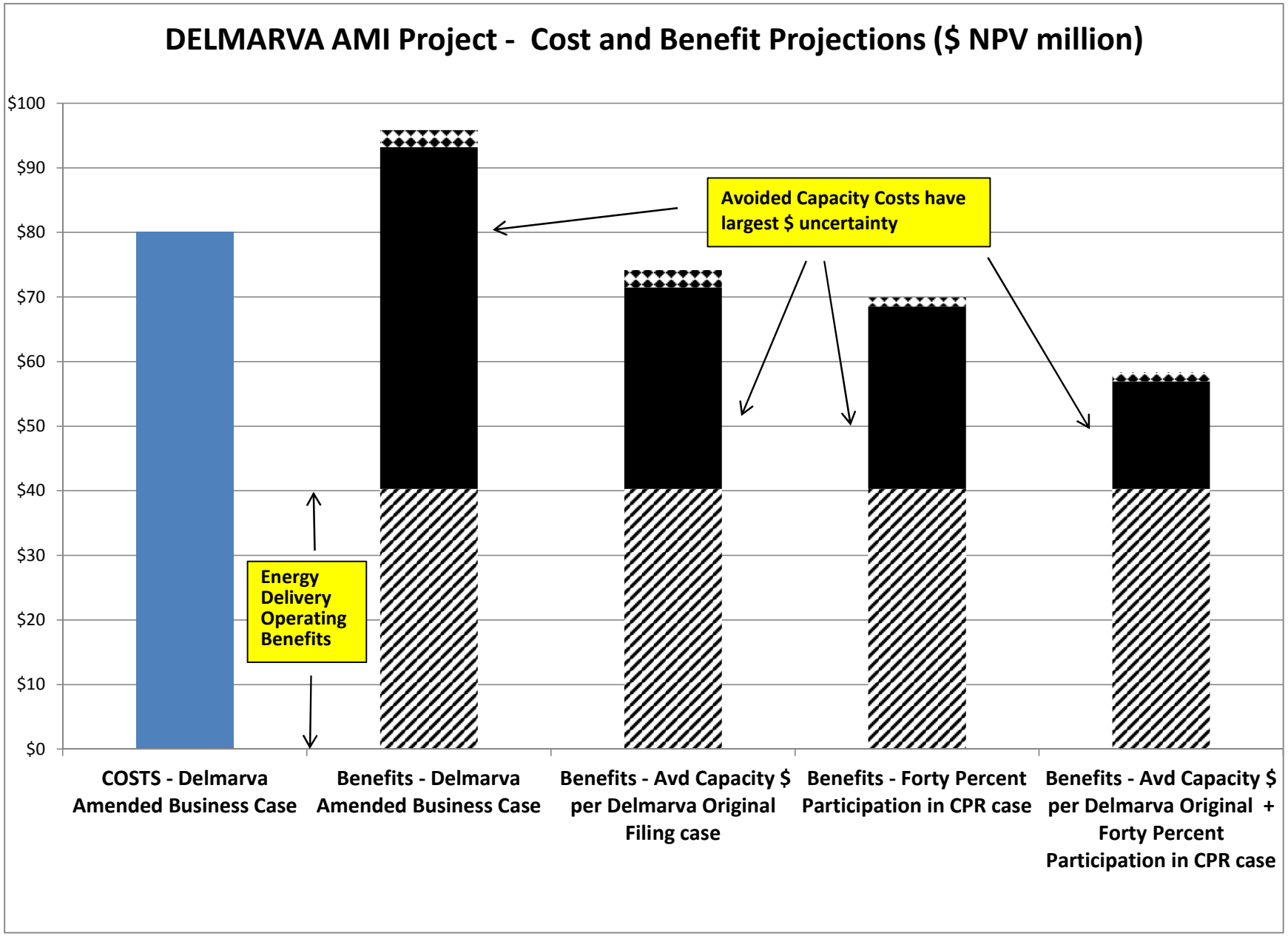
Member, Canada-Nova Scotia Offshore Oil and Gas Board, 1983–1986.
Member of a federal-provincial board responsible for regulating petroleum industry exploration and development activity offshore Nova Scotia.

Assistant Deputy Minister of Energy 1983–1986.
Responsible for analysis and implementation of provincial energy policies and programs, as well as for Energy Division budget and staff. Directed preparation of comprehensive energy plan emphasizing energy efficiency and use of provincial energy resources. Senior technical advisor on provincial team responsible for negotiating and implementing a federal/provincial fiscal, regulatory, and legislative regime to govern offshore oil and gas. Also served as Director of Energy Resources (1982-1983) and Assistant to the Deputy Minister. (1981-1982)

Nova Scotia Research Foundation, Dartmouth, Canada, *Consultant,* 1978–1981.
Canadian Keyes Fibre, Hantsport, Canada, *Project Engineer,* 1975–1977.
Imperial Group Limited, Bristol, England, *Management Consultant,* 1973–1975.

EDUCATION

M.S., Technology and Policy (Energy), Massachusetts Institute of Technology, 1979.
B.Eng., Industrial Engineering (with Distinction), Dalhousie University, Canada, 1973.

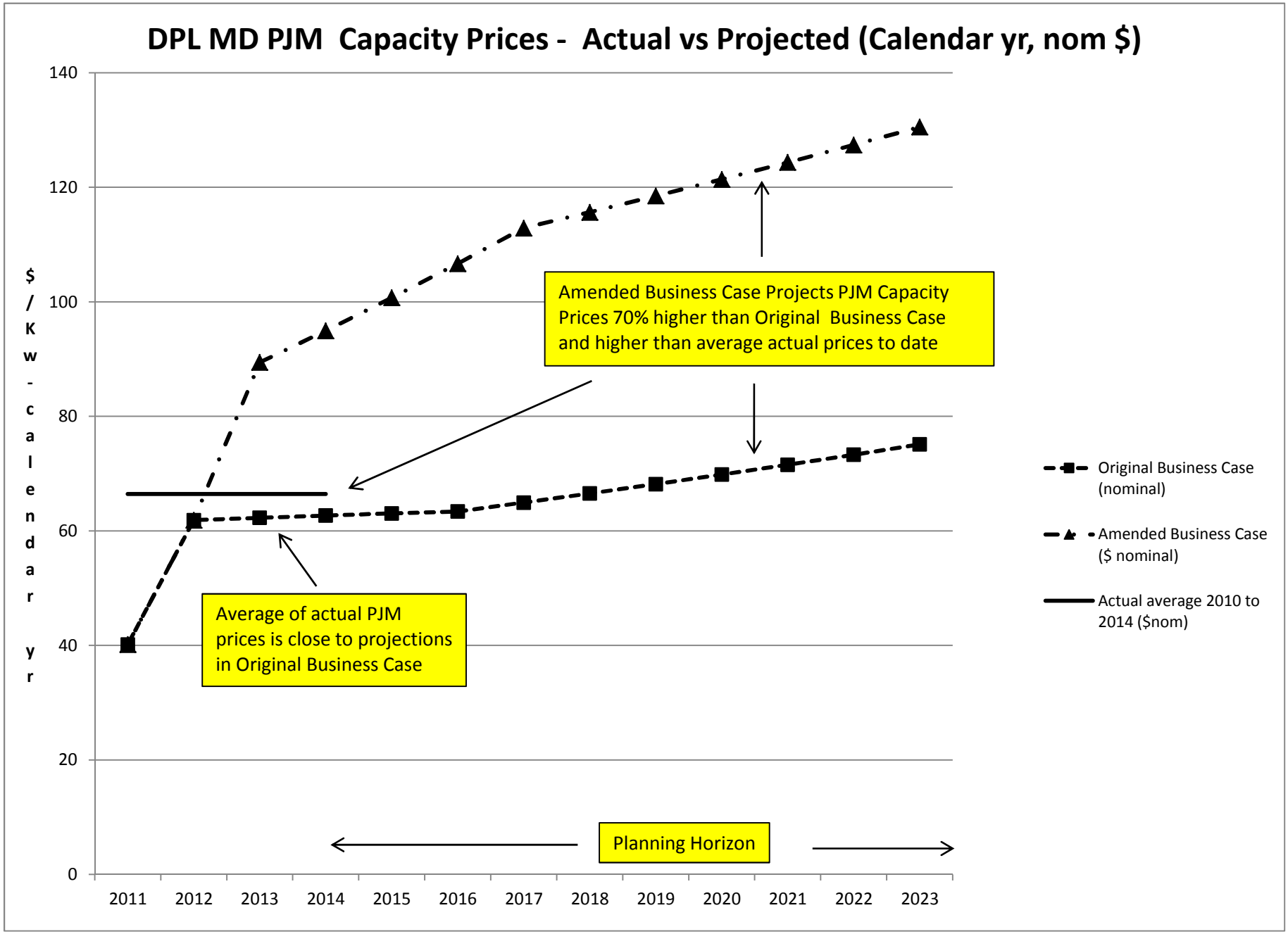

DELMARVA AMI Project - Cost and Benefit Projections ($ NPV million)
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Avoided Capacity Costs have largest $ uncertainty
Energy Delivery Operating Benefits
COSTS - Delmarva Amended Business Case
Benefits - Delmarva Amended Business Case
Benefits - Avd Capacity $ per Delmarva Original Filing case
Benefits - Forty Percent Participation in CPR case
Benefits - Avd Capacity $ per Delmarva Original + Forty Percent Participation in CPR case

Delmarva AMI Project - Cost and Benefit Projections ($ NPV million)

Category	Description		Delmarva Amended Business Case	Sensitivity Case - Capacity Costs per Delmarva Original Filed Benefits	Sensitivity Case - Forty Percent Participation in Critical Peak Rebate (CPR)	Sensitivity Case - Capacity Costs per Delmarva Original Filed Benefits + Forty Percent Participation in CPR
			PVRR	PVRR	PVRR	PVRR
			a	b	c	d
Costs	**Revenue Requirement**	**1**	**$ 80.1**	**$ 80.1**	**$ 80.1**	**$ 80.1**
Benefits						
AMI	*Energy Delivery Operating Benefits*	2	$ 40.3	**$ 40.3**	$ 40.3	$ 40.3
						$ -
DR	*Projected Customer Savings in Reductions in Peak Load*					
	Avoided Capacity costs	3	**$ 52.9**	**$ 31.2**	**$ 28.2**	**$ 16.6**
	Avoided energy costs	4 a	**$ 0.9**	**$ 0.9**	**$ 0.5**	**$ 0.5**
	Price mitigation Benefit	4 b	**$ 1.8**	**$ 1.8**	**$ 0.9**	**$ 0.9**
	Sub-total	4 c	**$ 55.6**	**$ 33.9**	**$ 29.6**	**$ 18.1**
Projected Benefits and Savings		5	**$ 95.9**	$ 74.2	$ 69.9	$ 58.4
Net Cost or (Net Benefits i.e. Savings)		**6**	**$ (15.8)**	$ 5.9	$ 10.2	$ 21.7
Benefit to Cost Ratio		7	**1.196**	0.926	0.873	0.729

Sources / Notes

a	Lefkowitz Direct, page 4 and Workpaper MD DPL 9207 DR 9-20 Attachment A JRH		
b	**avoided capacity cost adjustment multiplier**	59%	Exhibit JRH - 3
c	customer savings adjustment multiplier	53%	40 % / 75 %
d = b * c	**avoided capacity cost adjustment multiplier**	31%	
e = c	other customer savings adjustment multiplier	53%	


DPL MD PJM Capacity Prices - Actual vs Projected (Calendar yr, nom $)
$/Kw-calendar yr
140
120
100
80
60
40
20
0
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Amended Business Case Projects PJM Capacity Prices 70% higher than Original Business Case and higher than average actual prices to date
Average of actual PJM prices is close to projections in Original Business Case
Planning Horizon
Original Business Case (nominal)
Amended Business Case ($ nominal)
Actual average 2010 to 2014 ($nom)

DPL MD PJM Calendar Year Capacity Prices - Actual vs Projected ($ per kw-yr)

Source	Planning Horizon														Averages		
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 to 2014	2011 to 2020	Planning Horizon (2014 - 2023)
Actual ($ nominal)	68.72	$ 51.73	$ 61.87	$ 85.97	$ 63.98										**$ 66.45**		
Actual average 2010 to 2014 ($nom)	66.45	66.45	66.45	66.45	66.45										**$ 66.45**		
Original Business Case (nominal)		$ 40.15	$ 61.88	$ 62.29	$ 62.68	$ 63.05	$ 63.40	$ 64.95	$ 66.54	$ 68.17	$ 69.84	$ 71.55	$ 73.31	$ 75.10	**$ 56.75**	$ 62.29	**$ 67.86**
Amended Business Case ($ nominal)		$ 40.15	$ 61.88	$ 89.43	$ 94.96	$ 100.70	$ 106.68	$ 112.88	$ 115.65	$ 118.48	$ 121.38	$ 124.36	$ 127.40	$ 130.52	**$ 71.60**	$ 96.22	**$ 115.30**
Brattle 2009 ($ 2009)		$ 38.25	$ 57.55	$ 56.54	$ 55.53	$ 54.52	$ 53.52	$ 53.52	$ 53.52	$ 53.52	$ 53.52	$ 53.52	$ 53.52	$ 53.52	**$ 51.97**	$ 53.00	**$ 53.82**
Brattle 2010 ($ 2009)		$ 38.25	$ 57.55	$ 81.17	$ 84.13	$ 87.09	$ 90.05	$ 93.01	$ 93.01	$ 93.01	$ 93.01	$ 93.01	$ 93.01	$ 93.01	**$ 65.28**	$ 81.03	**$ 91.23**
Amended Business Case (nominal) as per cent of Original usiness Case nominal															126%	154%	**170%**
Original Business Case (nominal) as perecent of Amended Business Case nominal															79%	65%	**59%**

1 Actuals for 2012 from DPL/PEPCO response to OPC 4-20 d; actuals for other years from PJM Net CONE and BRA prices worksheet

CPR rates and illustrative credits to average residential participants

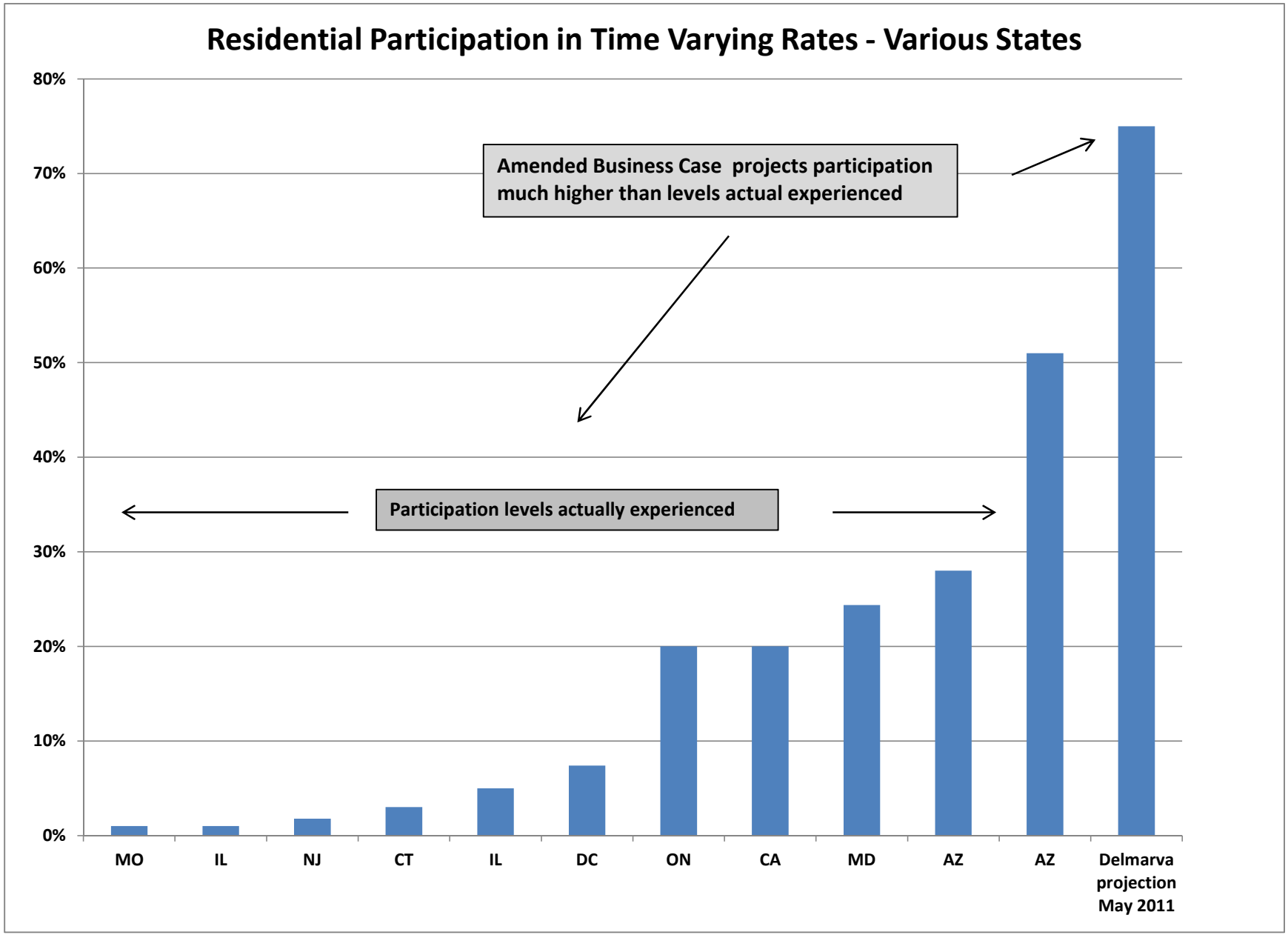
Average Residential Customer	Peak Load	CPR	Average reduction		CPR event duration	Average residential participant benefit per event	CPR events per year	Average residential participant benefit per year
	kW	$/kWh	kw per kWh	%	hours/event	$	Events/yr	$/yr
	a	b	c	d	e	f = b * c * e	g	h = f * g
DLC	1.9	$ 1.25	0.2336	12%	4	**$ 1.17**	15	**$ 18**
non DLC	1.9	$ 1.25	0.4326	23%	4	**$ 2.16**	15	**$ 32**

Sources

a Source : Response OPC DR 9-11 F, 2010 Brattle Work Papers, "impacts" tab

b Bumgarner Direct Testimony at 8

c DLC participant reductions **54%** of non- DLC participant reductions
Source : Response OPC DR 9-11 F, 2010 Brattle Work Papers, "impacts" tab


Residential Participation in Time Varying Rates - Various States
80%
70%
60%
50%
40%
30%
20%
10%
0%
Amended Business Case projects participation much higher than levels actual experienced
Participation levels actually experienced
MO
IL
NJ
CT
IL
DC
ON
CA
MD
AZ
AZ
Delmarva projection May 2011

Delmarva Responses to Selected Data Requests

OPC DR 1 -14

OPC DR 1-15

OPC 9 – 9

OPC 9-10

OPC DR 9 – 11

OPC DR 9 – 13

OPC DR 9 – 14

OPC DR 9 – 15

OPC DR 9 – 16

OPC DR 9 – 17

OPC DR 10 – 1

AARP DR 1-4

AARP DR 1-7

AARP DR 1-10

AARP DR 2 - 2

AARP DR 2- 4

POTOMAC ELECTRIC POWER COMPANY AND
DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 1

QUESTION NO. :14

Q. 14. PLEASE DESCRIBE HOW PHI DETERMINED THAT 20 PERCENT WAS THE APPROPRIATE PARTICIPATION RATE FOR OPT –IN. PLEASE IDENTIFY EACH PILOT PROGRAM THAT HAS TESTED THE PERCENTAGE OF VOLUNTARY OPT-IN BY RATE CLASS IN THE ABSENCE OF ANY ENROLLMENT INCENTIVE, IN CASH OR IN KIND, I.E. CASH OR ENABLING TECHNOLOGY AND PROVIDE ITS RESULTS, PLEASE IDENTIFY EACH SERVICE TERRITORY THAT OFFERS DYNAMIC PRICING AS A RATE OPTION PERCENTAGE OF VOLUNTARY OPT-IN BY RATE CLASS IN THE ABSENCE OF ANY ENROLLMENT INCENTIVE, IN CASH OR IN KIND, I.E. CASH OR ENABLING TECHNOLOGY AND PROVIDE ITS RESULTS

RESPONSE:

For the 2007 Brattle Study, the determination of the estimated participation rates is described in *Section 4.4 Enrollment Rate* of the Brattle Group Report in Appendix D (pp. 29-33). The basis for the assumed dynamic pricing participation rates is research conducted by Momentum Market Intelligence (MMI) as part of the California Statewide Pricing Pilot (SPP). This research is summarized in a 2003 report titled “Customer Preferences Market Research (CPMR): A Market Assessment of Time-Differentiated Rates Among Residential Customers in California”.

In addition, please see pages 2 through 6 of the testimony of Dr. Faruqui filed in this proceeding on September 1, 2009.

PHI is unaware of pilot programs that have specifically tested participation rates in relation to enrollment incentives.

The FERC Assessment of Demand Response & Advanced Metering provides some information on the utilities offering dynamic rates. PHI has not conducted a survey specifically focused on enrollment in these dynamic rates and its relationship to participation incentives.

The FERC study can be found at: http://www.ferc.gov/legal/staff-reports/12-08-demand-response.pdf

SPONSOR: Ahmad Faruqui

POTOMAC ELECTRIC POWER COMPANY AND
DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 1

QUESTION NO. :15

Q. 15. PLEASE DESCRIBE HOW PHI DETERMINED THAT 80 PERCENT WAS THE APPROPRIATE RATE FOR OPT –OUT.

RESPONSE:

A. Please see the response to Question 14.

SPONSOR: Ahmad Faruqui

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 9

Q. CRITERIA FOR DETERMINING CRITICAL PEAK PERIODS. DIRECT TESTIMONY OF MR. SUNDERHAUF, PAGE 3 LINE 22 TO PAGE 4 LINE 14.

A. PLEASE IDENTIFY ALL CRITERIA THE COMPANY WILL USE TO DEFINE OR CALL CRITICAL PEAK EVENTS.

B. PLEASE INDICATE IF THE COMPANY WILL USE THE SAME CRITERIA AS PJM USES FOR DEMAND RESPONSE PRODUCTS IN THE RPM. IF NOT, WHY NOT.

C. PLEASE EXPLAIN WHAT THE COMPANY WILL DO IN A YEAR WHEN ACTUAL CONDITIONS DO NOT TRIGGER ANY CRITICAL PEAK EVENTS, E.G. A COOLER THAN NORMAL SUMMER WITH LOW PJM DAY-AHEAD LMS.

D. PLEASE INDICATE WHETHER THE COMPANY GUARANTEES TO PROVIDE CUSTOMERS WITH NOTIFICATION OF A CRITICAL PEAK EVENT PRIOR TO A CRITICAL PEAK EVENT.

RESPONSE:

A. A. The Company plans to use one or more of the following criteria to call events: 1) PJM emergency demand reduction event call; 2) economic call based upon day ahead wholesale zonal energy market prices; 3) local system emergencies; and 4) program operational tests.

B. Yes. PJM initiated demand reduction events in addition to the events described in response to Part A of this question.

C. Program operational test Critical Peak Events will be called. The purpose of these tests are: 1) to maintain customer participant awareness of the program; 2) to provide bill savings opportunities for those who reduce their energy use during events; 3) PJM DR program testing compliance; and 4) to reduce energy market prices during weekday summer periods.

D. The Company does not guarantee to provide customers with notification prior to a Critical Peak Event, but will make a reasonable attempt to do so.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 10

Q. ELIGIBILITY FOR DELMARVA'S CPR. DIRECT TESTIMONY OF MR. SUNDERHAUF, PAGE 4 LINES 17 TO 23. PLEASE INDICATE WHETHER THE COMPANY ASSUMES THAT CUSTOMERS WITH INSTALLED AMI METERS AND WHO PURCHASE THEIR ELECTRICITY FROM ELECTRICITY SUPPLIERS WILL HAVE THE OPPORTUNITY TO EARN A BILL CREDIT UNDER THE COMPANY'S CPR RATE.

RESPONSE:

A. No.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 9

Q. CRITERIA FOR DETERMINING CRITICAL PEAK PERIODS. DIRECT TESTIMONY OF MR. SUNDERHAUF, PAGE 3 LINE 22 TO PAGE 4 LINE 14.

A. PLEASE IDENTIFY ALL CRITERIA THE COMPANY WILL USE TO DEFINE OR CALL CRITICAL PEAK EVENTS.

B. PLEASE INDICATE IF THE COMPANY WILL USE THE SAME CRITERIA AS PJM USES FOR DEMAND RESPONSE PRODUCTS IN THE RPM. IF NOT, WHY NOT.

C. PLEASE EXPLAIN WHAT THE COMPANY WILL DO IN A YEAR WHEN ACTUAL CONDITIONS DO NOT TRIGGER ANY CRITICAL PEAK EVENTS, E.G. A COOLER THAN NORMAL SUMMER WITH LOW PJM DAY-AHEAD LMS.

D. PLEASE INDICATE WHETHER THE COMPANY GUARANTEES TO PROVIDE CUSTOMERS WITH NOTIFICATION OF A CRITICAL PEAK EVENT PRIOR TO A CRITICAL PEAK EVENT.

RESPONSE:

A. A. The Company plans to use one or more of the following criteria to call events: 1) PJM emergency demand reduction event call; 2) economic call based upon day ahead wholesale zonal energy market prices; 3) local system emergencies; and 4) program operational tests.

B. Yes. PJM initiated demand reduction events in addition to the events described in response to Part A of this question.

C. Program operational test Critical Peak Events will be called. The purpose of these tests are: 1) to maintain customer participant awareness of the program; 2) to provide bill savings opportunities for those who reduce their energy use during events; 3) PJM DR program testing compliance; and 4) to reduce energy market prices during weekday summer periods.

D. The Company does not guarantee to provide customers with notification prior to a Critical Peak Event, but will make a reasonable attempt to do so.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 11

Q. CAPACITY COST – DELMARVA MD. DIRECT TESTIMONY OF MR. SUNDERHAUF, PAGE 5 LINE 8.

A. PLEASE IDENTIFY THE CAPACITY UNITS TO WHICH THE TEN YEAR AVERAGE CAPACITY COST OF $81.03 APPLIES.

B. PLEASE PROVIDE THE ELECTRONIC OPERATIONAL WORKBOOK WITH ALL INPUT ASSUMPTIONS AND CALCULATIONS USED TO DEVELOP THE TEN YEAR AVERAGE CAPACITY COST OF $81.03.

RESPONSE:

A. A. The capacity value is expressed in $/kW-year.

B. Please see the attached:
Attachment A - 2009 PJM State of the Market capacity report
Attachment B - 2013-2014 BRA Auction results
Attachment C - 2012-2013 Net CONE prices
Attachment D - 2013-2014 Net CONE prices
Attachment E - 2009 Brattle Work papers - capacity inputs on “Impacts” tab (provided electronically only)
Attachment F - 2010 Brattle Work papers - capacity inputs on “Impacts” tab (provided electronically only)

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 13

Q. PARTICIPATION IN DYNAMIC PRICING. DIRECT TESTIMONY OF MR. SUNDERHAUF, TABLE 1 PAGE 5 AND PAGE 7 LINES 16 TO 19.

A. IS THE COMPANY ASSUMING THAT 75% OF SOS RESIDENTIAL CUSTOMERS AND MEDIUM NON-RESIDENTIAL CUSTOMERS WILL RESPOND TO THE CPR WITH AVERAGE ELASTICITY'S OF -0.121 (SUBSTITUTION) AND -0.039 (DAILY) RESPECTIVELY? IF NOT, PLEASE EXPLAIN THE RELATIONSHIP BETWEEN THE COMPANY'S ASSUMED PARTICIPATION RATE AND ITS ASSUMED ELASTICITY'S.

B. PLEASE PROVIDE THE BASIS FOR THE COMPANY'S ASSUMPTION THAT 75% OF SOS RESIDENTIAL CUSTOMERS AND MEDIUM NON-RESIDENTIAL CUSTOMERS WILL RESPOND TO THE CPR WITH AVERAGE ELASTICITY'S OF -0.121 (SUBSTITUTION) AND -0.039 (DAILY) RESPECTIVELY. PLEASE INCLUDE ALL REVIEWS OF ACTUAL EXPERIENCE WITH CPR RATES AND OTHER ANALYSES PREPARED BY OR FOR THE COMPANY OF PARTICIPATION RATES.

RESPONSE:

A. A. Yes.

B. This estimate was developed from the California Statewide pilot and use of the PRISM modeling tool. See the attached for a copy of the final PowerCentsDC™ study.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 14

Q. PARTICIPATION IN DYNAMIC PRICING. DIRECT TESTIMONY OF MR. SUNDERHAUF, TABLE 1 PAGE 5 AND PAGE 7 LINES 16 TO 19. PLEASE PROVIDE ALL ANALYSES PREPARED BY OR FOR THE COMPANY OF THE DISTRIBUTION OF REDUCTIONS PER PARTICIPANTS CORRESPONDING TO THE AVERAGE ELASTICITY'S FROM THE 2009 BGE RESULTS.

RESPONSE:

A. The requested analysis has not been performed. The customer elasticities are on a class basis, and individual achievements will vary by customer.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 15

Q. PARTICIPATION IN DYNAMIC PRICING. DIRECT TESTIMONY OF MR. SUNDERHAUF, TABLE 1 PAGE 5 AND PAGE 6 LINES 16 TO 19. PLEASE PROVIDE THE EXPECTED REDUCTION IN DEMAND PER CRITICAL PEAK PERIOD, AND REBATE AMOUNT AT $1.25 PER KWH, A DPL MD RESIDENTIAL CUSTOMER WOULD ACHIEVE FROM EACH OF THE END-USE APPLICATIONS LISTED BELOW:

A. REDUCING CENTRAL AIR CONDITIONING.
B. REDUCING WATER HEATING.
C. REDUCING USE OF A WINDOW AIR CONDITIONER.
D. REDUCING USE OF AN ELECTRIC STOVE.

RESPONSE:

A. A.-D. The Company has not performed this analysis.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 16

Q. PARTICIPATION IN DYNAMIC PRICING. DIRECT TESTIMONY OF MR. SUNDERHAUF, TABLE 1 PAGE 5 AND PAGE 7 LINES 16 TO 19. AT A CPR OF $1.25 PER KWH, PLEASE PROVIDE THE ANNUAL SAVINGS A RESIDENTIAL CUSTOMER IN MD WOULD REALIZE AT THE COMPANY'S ASSUMED ELASTICITY'S.

RESPONSE:

A. The Company has not performed this analysis.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 9

QUESTION NO. 17

Q. PJM RPM CAPACITY COST IN THE PJM DELMARVA ZONE. DIRECT TESTIMONY OF MR. SUNDERHAUF, PAGE 9 LINES 17 TO 24. PLEASE PROVIDE THE BASIS FOR THE STATEMENT ON LINES 17 TO 19 INCLUDING ALL ANALYSES AND PROJECTIONS PREPARED BY OR FOR THE COMPANY OF PJM RPM CAPACITY PRICES IN THE PJM DELMARVA ZONE.

RESPONSE:

A. Please see the following table, which contains data provided in OPC Data Request No. 9-11, Attachments E and F.

	2009 Analysis Capacity ($/KW-yr)	**2010 Analysis** Capacity ($/KW-yr)
2010	$ 38.25	
2011	$ 57.55	$ 38.25
2012	$ 56.54	$ 57.55
2013	$ 55.53	$ 81.17
2014	$ 54.52	$ 84.13
2015	$ 53.52	$ 87.09
2016	$ 53.52	$ 90.05
2017	$ 53.52	$ 93.01
2018	$ 53.52	$ 93.01
2019	$ 53.52	$ 93.01
2020		$ 93.01
Average:	$ 53.00	$ 81.03

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO OPC DATA REQUEST NO. 10

QUESTION NO. 1

Q. MONETIZING REDUCTIONS IN PEAK DEMAND FROM CPR. FOLLOW-UP TO RESPONSES TO OPC DATA REQUESTS 9 – 8 A. AND 9 – 9 C. AS WELL AS 2 – 19 AND 2 – 20.

A. PLEASE DESCRIBE THE PROCESS THROUGH WHICH THE COMPANY MONETIZES THE REDUCTIONS IN PEAK DEMAND RESULTING FROM ITS DIRECT LOAD CONTROL PROGRAM.
B. PLEASE DESCRIBE THE PROCESS THROUGH WHICH THE COMPANY PROPOSES TO MONETIZE THE REDUCTIONS IN PEAK DEMAND RESULTING FROM ITS CPR RATE OFFERING.
C. PLEASE IDENTIFY THE PJM DR PRODUCT FOR WHICH REDUCTIONS IN PEAK DEMAND RESULTING FROM ITS CPR RATE OFFERING WILL QUALIFY, I.E., LIMITED DR, EXTENDED SUMMER DR OR ANNUAL DR.

RESPONSE:

A.

a. The Company has monetized the reductions in peak demand resulting from its direct load control program by bidding projected demand reductions for future years into the PJM Base Residual Auction and also by registering current year demand reductions in the Interruptible Load for Reliability program.

b. The Company plans to monetize the reductions in peak demand resulting from its CPR rate offering program by bidding projected demand reductions for future years into the PJM Base Residual Auction as well as through PJM Incremental Auctions, as appropriate.

c. The Company believes that the CPR rate offering could qualify as Limited DR, Extended Summer or Annual DR based on the final tariff design. However, the peak demand reduction for CPR could vary depending on the period during which compliance is to be measured, and customer response from CPR could vary depending on the season and the time of day.

SPONSOR: Stephen L. Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO AARP DATA REQUEST NO. 1

QUESTION NO. 4

Q. IDENTIFY THE MONETIZATION MECHANISM THAT DELMARVA POWER AND LIGHT COMPANY ("DELMARVA") WILL USE TO DELIVER THE ENERGY SUPPLY SAVINGS DUE TO REDUCTION IN PEAK LOAD AS PROJECTED IN TABLE 1.

RESPONSE:

A. The demand reductions will be used within the existing PJM demand response market which includes both capacity and energy. Forecast demand response reductions can be bid into the PJM Reliability Pricing Model ("RPM") Base Residual Auction ("BRA"), the RPM incremental auctions, and/or through bilateral agreements. Successful market bids will receive a monthly capacity payment based upon the market clearing price beginning in the PJM delivery year. High existing capacity prices within the Delmarva region provide a significant financial opportunity. Demand response energy market opportunities also exist through the PJM Emergency and Economic Load Response programs for the payment of achieved energy reductions. Price mitigation impacts for both the PJM capacity and energy market will be achieved as a result of the additional demand resource.

SPONSOR: Joseph Janocha

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO AARP DATA REQUEST NO. 1

QUESTION NO. 7

Q. DISCUSS THE BASIS FOR USING THE BGE 2009 RESIDENTIAL SUBSTITUTION ELASTICITY IN SUPPLY SAVINGS ASSUMPTIONS AND IMPACTS ON PAGE 5 OF THE UPDATED AMI BUSINESS CASE. PROVIDE THE WORK PAPERS FOR THIS CALCULATION. IN YOUR RESPONSE COMPARE THE LOAD FACTORS AND USAGE PROFILES OF THE BGE CUSTOMERS RELIED UPON FOR THESE RESULTS AND COMPARE THOSE LOAD FACTORS AND USAGE PROFILES WITH YOUR CUSTOMER LOAD FACTORS AND USAGE PROFILE IN DELMARVA.

RESPONSE:

A. The Company used the BGE pilot 2008 and 2009 residential elasticity estimates because the residential demographics, housing, and summer weather characteristics of Delmarva's Maryland service territory have greater similarity to the BGE service area than other geographic areas where recent dynamic pricing studies have been conducted. The Company does not have work papers related to the decision to use BGE sourced data. Delmarva has not performed the requested analysis.

SPONSOR: Roger Faruqui

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO AARP DATA REQUEST NO. 1

QUESTION NO. 10

Q. WITH REGARD TO CUSTOMERS THAT PARTICIPATE IN CPR AND EARN A CREDIT OR REBATE FOR PEAK LOAD REDUCTION, IDENTIFY THE RESIDENTIAL CUSTOMER PEAK LOAD REDUCTION AND CUSTOMER BILL CREDIT FOR CUSTOMERS WITH A LOW, AVERAGE, AND HIGH RESPONSE FOR EACH YEAR OF THE 10-YEAR BENEFIT COST PROJECTION. IN YOUR RESPONSE, PROVIDE THE COMPANY'S BEST ESTIMATE OF "LOW", "AVERAGE" AND "HIGH" RESPONSE FOR RESIDENTIAL CUSTOMERS.

RESPONSE:

A. The Company has not performed this analysis.

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO AARP DATA REQUEST NO. 2

QUESTION NO. 2

Q. REGARDING YOUR RELIANCE ON THE BGE 2009 RESIDENTIAL SUBSTITUTION ELASTICITY IN SUPPLY SAVINGS ASSUMPTIONS AND IMPACTS ON PAGE 5 OF THE UPDATED AMI BUSINESS CASE, HAVE YOU PERFORMED OR HAD PERFORMED ANY ANALYSES THAT COMPARED THE BGE CUSTOMERS TO DELMARVA'S CUSTOMERS? IF SO, PLEASE PROVIDE ALL SUCH ANALYSES ALONG WITH THE WORK PAPERS FOR EACH ANALYSIS. IF NOT, PLEASE INDICATE THE INCREMENTAL COSTS AND TIME YOU WOULD EXPEND IN PREPARING THESE ANALYSES.

RESPONSE:

A. No. A comparative analysis would require access to BG&E's historical load shapes. Delmarva cannot provide an estimate of the required costs without greater specificity in the request.

SPONSOR: Stephen Sunderhauf

DELMARVA POWER & LIGHT COMPANY
MARYLAND CASE NO. 9207
RESPONSE TO AARP DATA REQUEST NO. 2

QUESTION NO. 4

Q. REGARDING CUSTOMERS WHO PARTICIPATE IN CPR, HAVE YOU PERFORMED OR HAD PERFORMED ANY ANALYSES THAT RELATE TO AMOUNTS OF ANY CREDITS AND/OR REBATES FOR RESIDENTIAL CUSTOMERS OF DELMARVA FOR EACH YEAR OF THE 10-YEAR PERIOD OF YOUR REVISED AMI BUSINESS CASE OR FOR ANY OTHER TIME PERIOD IN YOUR REVISED AMI BUSINESS CASE? IF SO, PLEASE PROVIDE ALL SUCH ANALYSES ALONG WITH THE WORK PAPERS FOR EACH ANALYSIS. IF NOT, PLEASE INDICATE THE INCREMENTAL COSTS AND TIME YOU WOULD EXPEND IN PREPARING THESE ANALYSES.

RESPONSE:

A. No. Delmarva cannot provide an estimate of the required costs without greater specificity in the request.

SPONSOR: Stephen Sunderhauf