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16 September 2013

VIA ELECTRONIC MAIL AND HAND DELIVERY

Alisa Bentley, Secretary
Delaware Public Service Commission
861 Silver Lake Blvd., Ste. 100
Dover, DE 19904

Re: *In the Matter of the Delmarva Power & Light Company's 2012 Integrated Resource Plan (filed December 7, 2012),* PSC Docket No. 12-544

Dear Ms. Bentley:

Enclosed please find for filing with the Delaware Public Service Commission the original and ten copies of the "Report From The Delaware Public Service Commission Staff On Delmarva Power And Light Company's 2012 Integrated Resource Plan."

Copies have been provided to the service list by electronic mail. If any party would like a hard copy of Staff's comments, please advise the undersigned.

Respectfully,

James McC. Geddes

Enclosures
JMcCG:dlb
cc: Service List (via e-mail; w/encl.)

Comm.
Bob
Jan's
Alisa
John
Toni
Cleshona
Pam

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE

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IN THE MATTER OF THE DELMARVA POWER AND LIGHT COMPANY'S 2012 INTEGRATED RESOURCE PLAN (FILED DECEMBER 7, 2012)	))))	PSC DOCKET NO. 12-544

REPORT FROM THE DELAWARE PUBLIC SERVICE COMMISSION STAFF ON DELMARVA POWER AND LIGHT COMPANY'S 2012 INTEGRATED RESOURCE PLAN

Dated: September 16, 2013

Table of Contents i

Executive Summary 1

Legislative & Regulatory Background 3

A. Legislative Background 3

B. *2007 IRP (PSC Docket No. 07-20)* 3

C. *2010 IRP (PSC Docket No. 10-25* 4

D. *2012 IRP (PSC Docket No. 12-544)* 5

Merits of the 2012 IRP 5

A. Supply Side Resources 5

B. Demand Side Resources 7

a. Combined Heat and Power 7

b. Demand Response 9

c. Energy Efficiency 11

C. Renewable Energy Portfolio Standards 15

Conclusions and Recommendations 18

Executive Summary

On December 7, 2012, Delmarva Power & Light Company ("Delmarva" or the "Company") filed its 2012 Integrated Resource Plan ("IRP"). A series of workshops were organized to review, discuss and propose potential changes to the IRP in an attempt to develop the best 10-year resource plan for Delmarva.

Commission Staff has reviewed the IRP, participated in all of the workshops and has several recommendations for Delmarva, to ensure that the Company acquires sufficient and reliable resources, which meet its ratepayer's future needs at a minimal cost.

On the supply side Staff is concerned that Delaware's average retail price for all sectors (residential, commercial and industrial) is the fourth highest in the region.[1] It is comparable with Maryland's average price, and only Pennsylvania and Virginia have lower average electricity prices. However, Delaware's average electricity price for all sectors is well above the national average of 9.87 cents/KWh. Staff is concerned that the higher retail electric rate is a burden on ratepayers and could be a deterrent to new industry coming to and re-locating in Delaware. Delaware's economy is so small it can be affected by shifts in a single industry or a couple of industries[2]. In Delaware, unemployment is 7.4 percent, and has remained stagnant for a year as the U.S. jobs market slowly improved. Recently Delaware Senator Robert Marshall stated[3] "we can't ignore the obvious national, regional, even global signals that our employment base needs to expand." The approach Staff thinks is warranted is more holistic rather than a traditional status quo approach that only examines sufficient supply options with current rules assumed to be in place. Staff recommends a study by an independent consultant focused on recommendations to lower the overall cost of electricity in Delaware.[4] These recommendations would concentrate on the rate impact for Delmarva ratepayers, but also take into consideration the overall impact on the cost of electricity in the state.

Concerning demand side resources, Staff has concerns with three resources included by Delmarva in the IRP Reference Case: (i) Combined Heat and Power ("CHP" or "cogeneration"); (ii) Demand Response ("DR") programs; and (iii) Energy Efficiency ("EE") programs. The overall DSM cumulative impacts reflected by Delmarva in the IRP Reference Case could be overstated and Staff recommends that the next IRP address Staff concerns. The result of the potential overstatement of DSM effects in the IRP Reference Case would result in an understatement of the resource costs necessary to provide the Standard Offer Service. However,

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[1] Delaware, Maryland, Pennsylvania, Virginia

[2] Steven Cochrane, managing director of Moody's Analytics, http://www.delmarvanow.com/article/20130912/NEWS01/130912001/Moody-s-says-Delaware-still-risk-slipping-into-recession-?nclick_check=1

[3] http://www.delmarvanow.com/article/20130912/NEWS01/130912001/Moody-s-says-Delaware-still-risk-slipping-into-recession-?nclick_check=1

[4] For example this includes but not limited to: supply resource options, demand response, energy efficiency, renewables, transmission, natural gas delivery, bilateral contracts, self-supply.

Staff does not conclude at this time that the overall resource portfolio recommendations of Delmarva would be substantially different than presented in the IRP filed in this docket.

- For CHP Staff would suggest that, rather than reflect a theoretical maximum potential for CHP without regard for cost-effectiveness and customer willingness to pursue cogeneration, a more realistic starting point for estimating the potential for CHP in Delaware should be chosen.

- For demand response, Staff would suggest that, should PJM implement significant revisions to the participation of DR in the Base Residual Auctions ("BRAs"), Delmarva should also consider alternative approaches to dynamic pricing in addition to modifications to the existing program (such as revising/lowering the level of the savings credit) to avoid differences between PJM revenues and the current program implementation costs. For example, Delmarva should consider developing critical peak pricing to influence customer usage during high cost periods that does not require funding for credits/rebates or rely on estimating baselines and avoided energy.

- Concerning energy efficiency, given the level of SEU funding, the existing legislatively-created conflict between the SEU and the Company, as well as the practical limitations for implementation of specific energy efficiency programs (even if the legislatively-created conflicts were resolved),[5] Delmarva should no longer include in the IRP Reference Case the assumption of SEU programs to achieve the 15% legislatively-mandated energy savings goal.

- Staff would recommend that the Commission should rely on the Ratepayer Impact Measure ("RIM") Test as a guide rather than an absolute threshold. By requiring the calculation of the RIM Test for energy efficiency programs that require Commission approval for cost recovery, the Commission could recognize, on a case-by-case basis, overarching policy issues that would justify approving cost recovery for an energy efficiency that was less than cost effective under the RIM Test.[6]

Staff is concerned that if the energy efficiency goals are not met, the cost for Renewable Energy Portfolio Standard compliance could increase significantly. This impact could be compounded by the possibility of upward pressure on Renewable Energy Credit (REC) prices due to insufficient supply. Staff has several recommendations:

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[5] Staff would also note that the greatest energy savings potential occurs in the summer (when usage is highest) and energy efficiency programs for the summer of 2014 is not realistic.

6 For example, the Commission could adopt a general guideline of approving energy efficiency programs that had a ratio of greater than .8 on the RIM Test, with the discretion to depart from that guideline on a case-by-case basis to reflect other policy considerations.

- Staff recommends that Delmarva perform an updated RPS compliance analysis using current information including, but not limited to, load obligation and appropriate DSM/DR programs, Bloom offset appropriation, and market pricing and forecast for RECs/SRECs for the 10-year period

- Staff recommends, pending approval of the rulemaking on the cost caps for solar and Eligible Energy Resources, an analysis be completed by the Division of Energy and Climate (Division) and Delmarva to determine if the RPS obligation exceeds the cost caps for the compliance year when the regulation becomes effective. Staff recommends that no RECs or SRECs beyond the level prescribed by the 2010 legislation be purchased by Delmarva, except for specific reasons[7] when RECs/SRECs maybe banked to fulfill the minimum cumulative percentage requirements in a subsequent compliance year.

- After completion of the analysis recommended by Staff, Delmarva should consider its REC/SREC procurement plan to determine whether it will be beneficial to procure additional, long-term RECs in the near future.

Legislative & Regulatory Background

A. Legislative Background

In 2006, the Governor signed into law, The Electric Utility Retail Customer Supply Act ("EURCSA"). EURCSA required Delmarva to file an Integrated Resource Plan ("IRP") with the Delaware Public Service Commission (the "Commission"), the State Energy Office, the Controller General and the Director of the Office of Management & Budget, in which Delmarva is required to "systematically evaluate all available supply options during a 10-year planning period in order to acquire sufficient, efficient, and reliable resources over time to meet its customers' needs at a minimal cost," "set forth [Delmarva's] supply and demand forecast for the next 10-year period" and "set forth the resource mix with which [Delmarva] proposes to meet its supply obligations for that 10-year period..." (26 *Del. C.* §1007(c) (1)).

B. 2007 IRP (PSC Docket No. 07-20)

On December 1, 2006, Delmarva filed its initial IRP pursuant to the EURSCA. The Commission opened Docket No. 07-20 to review Delmarva's initial IRP. (*See*, Order No. 7122, dated January 23, 2007). In August, 2007, the Commission opened PSC Regulation Docket No. 60 to consider the development of rules and regulations to accomplish integrated resource

[7] Such as cost effective reasons, but the intention is not to exceed the minimum percentage by any substantial percentage.

planning for Delmarva's Standard Offer Service ("SOS") customers, as authorized by EURSCA. (*See,* Order 7263, dated August 18, 2009). Two years later, after circulating various drafts of the proposed rules to the interested parties, the Commission in 2009, promulgated revised proposed regulations (the "IRP Regulations") to govern Delmarva's development of its IRPs for its SOS customers. (*See*, Order 7268, dated August 18, 2009). No comments were filed with the Commission regarding the revised Proposed Regulations and pursuant to Order No. 7693 (December 8, 2009), the Commission promulgated the revised *Integrated Resource Planning Regulations* and directed the Secretary of the Commission to transmit them to the *Delaware Register of Regulations* for publication as final regulations. The final IRP Regulations were published in the *Delaware Register of Regulations* on January 11, 2010 and became effective on or about January 21, 2010.

Following the adoption of the IRP Regulations, the parties to PSC Docket No. 07-20 agreed that PSC Docket No. 07-20 should be closed and that Delmarva would file by May 31, 2010 a new IRP consistent with the IRP Regulations. In addition, in developing its new IRP, Delmarva would seek input from the public and key stakeholders through a series of technical working group meetings. In Order No. 7661 (September 22, 2009), the Commission approved the parties' agreement, established a schedule of working group meetings and an IRP filing date of May 31, 2010, and closed Docket No. 07-20. The Company conducted the technical working group meetings required by Order No. 7661 on issues including externalities, demand side management, conservation, modeling scenarios and load forecasting.

C. 2010 IRP (PSC Docket No. 10-2)

On March 11, 2010, Delmarva filed a Motion to Amend Filing Date (the "Motion") seeking the Commission's approval to amend Order No. 7661 to change the date for the filing of the 2010 IRP from May 31, 2010 to a date 90 days after the date that the PJM Board approves the 2010 Regional Transmission Expansion Plan ("RTEP"). The Commission granted the extension of the deadline for filing the IRP to October 31, 2010. However, Delmarva filed several more motions for extension, which were granted and it filed its 2010 IRP on December 1, 2010.

At its meeting on January 11, 2011, the Commission entered PSC Order No. 7888, which acknowledged that under 26 Del. Admin. C. §3010, Paragraph 2.0 the IRP was administratively complete. Public notice was published and interested persons were permitted to file written comments regarding the IRP by March 31, 2011.

Comments were received from the Public Service Commission Staff ("Staff'), the Division of the Public Advocate ("DPA"), the Department of Natural Resources and Environmental Control ("DNREC"), the Caesar Rodney Institute ("CRI"), NRG Energy ("NRG"), Calpine Corporation ("Calpine"), Mid-Atlantic Renewable Energy Coalition ("MAREC"), the Delaware Energy Users

Group ("DEUG"), the Sierra Club ("Sierra Club") and the Retail Energy Supply Association ("RESA"); and two interested non-intervener participants – the Delaware Nurses Association and John Greer, Jr., P.E. – also filed comments. Delmarva filed a reply to the comments submitted by the participants.

The designated Hearing Examiner deemed evidentiary hearings and briefing unnecessary; on November 17, 2011, while the matter was pending before the Hearing Examiner, Delmarva, Staff, the DPA and the CRI reached an agreement entitled "Path Forward on Delmarva Power & Light Company's Integrated Resource Plan ("IRP"): Joint Proposal to Ratify PSC Docket No. 10-2 ("Path Forward")." The Hearing Examiner submitted her Findings and Recommendations on November 22, 2011 recommending that the Commission ratify the IRP pursuant to 26 *Del. C.* §3010.2.0 as reasonable and in the best interests of Delaware ratepayers. The Hearing Examiner further recommended that the Commission approve the proposed Path Forward as just and reasonable and in the public interest.

On January 10, 2012, the Commission signed Order No. 8083 which adopted the Findings and Recommendations of the Hearing Examiner, except for the suggestion that Delmarva is not required to file a new IRP every two years. 26 *Del. C.* §1007(c)(1) requires Delmarva to file an IRP every two years after the date of the first IRP on December 1, 2006. The statute is silent as to whether that IRP can be an "update," as the Path Forward suggests. The Commission stated that unless the General Assembly amends Section 1007(c)(1), a full IRP is required every two years. The Commission ratified the IRP and ordered that the next IRP must be filed on or before December 1, 2012.

D. 2012 IRP (PSC Docket No. 12-544)

On December 6, 2012, Delmarva filed its current IRP. In Order No. 8259, dated December 18, 2012, the Commission opened the docket for review and comment and found the 2012 IRP to be administratively complete in fulfilling the requirements of 26 Del. Admin. *C.* §3010. The stakeholders determined that review of the IRP lends itself to informal workshops with discussion as part of a collaborative process to develop the best 10-year plan for Delmarva. Staff requested that the proposed procedural schedule be lengthened to accommodate a series of workshops. The workshops addressed various matters including ICF's modeling (i.e. power markets, natural gas price forecasting, RPS forecasts and pricing, air quality and health impacts), Delmarva's load forecasts, externality costs, generation resources, and demand side management.

Merits of the 2012 IRP

Supply Side Resources

The statute requires Delmarva to investigate all potential opportunities for diverse and reliable supply to meet its customer's needs at minimal cost. Delmarva states that the principal objectives of its plan "are to secure for SOS customers a reliable energy supply at a reasonable cost, maintain price stability, and at the same time, provide environmental benefits consistent with reasonable cost and price stability." The legislature has determined that as part of IRP process, Delmarva shall not rely exclusively on any particular resource or purchase procurement process and shall explore in detail all reasonable short- and long-term procurement or demand-side management strategies, even if a particular strategy is ultimately not recommended by the Company.

In determining its resource mix, Delmarva used the *IPM Model*, a multi-regional generation planning and production cost model. Generation resources evaluated by IPM included the following: traditional fossil fuel, nuclear, and renewables. Delmarva performed a sensitivity analysis with the addition of a hypothetical 300 MW gas combined cycle generator in Delaware. The combined cycle sensitivity case improves the performance of the Reference Case portfolio. Additional analysis of new offshore wind or new utility scale PV generation in Delaware was performed and neither an offshore wind plant nor an additional solar project would be economically useful to the Reference Supply Portfolio costs and would add significantly to the cost of supply.[8]

According to the Energy Information Administration (EIA) data Net Generation in Delaware in 2012 was 8,808 GWh and total retail sales of electricity was 11,606 GWh. Delaware relies on generation imports from outside the state to meet its load. Delmarva shows in Figure 4, page 82, of the IRP, that the projected load during the IRP period is below the total of the import and Delaware generation limit. Since parts of Delaware are considered constrained, energy and capacity prices can be higher than in other areas in the PJM region. Delaware's average retail price for all sectors (residential, commercial and industrial) is the fourth highest in the region. It is comparable with Maryland's average price, and only Pennsylvania and Virginia have lower average electricity prices. However, Delaware's average electricity price for all sectors is well above the national average of 9.87 cents/KWh. Staff is concerned that the higher retail electric rate is a burden on ratepayers and could be a deterrent to industry coming and re-locating in Delaware.

Staff views Delmarva's IRP as meeting the status quo, but not evaluating other resource possibilities that may be more beneficial to the ratepayer. Delmarva in their IRP Executive Summary states that the combination of available generation resources and transmission import capability into the DPL Zone will be sufficient to meet reliability requirements through 2022. Sufficient resources may not be the optimal in the long term; there may be other resource plans that may result in lower energy and capacity prices on the peninsula.[9] A better approach Staff

[8] 2012 IRP page 11

[9] Delmarva did perform a sensitivity analysis for adding a 300 MW gas-fired combined cycle generation unit and did state that it may warrant additional consideration and discussion in the working groups.

believes is more holistic rather than a traditional status quo approach that only examines supply options with current rules assumed to be in place. For example, were bilateral contracts considered, were transmission upgrades, self-supply or natural gas being brought to the lower part of the state explored to evaluate the costs and benefits long term to the ratepayer? Thus, Staff recommends a study by an independent consultant with recommendations to lower the cost of electricity in Delaware.[10] This study would consider current and proposed PJM rules that would affect the cost of electricity in Delaware. These recommendations would be focused on the rate impact for Delmarva ratepayers, but also take into consideration the overall impact on the cost of electricity in the state.

Demand Side Management Resources

As stated by Delmarva, the IRP Reference Case: [11]

> **[E]valuates demand side management (DSM) programs as potential resource options for meeting Delmarva Power Delaware customer energy and capacity requirements. In contrast to supply side options such as new generating units, DSM options reflect potential savings in either the total consumption of electrical energy, reduction of system demand during peak periods or both. Demand Side Resources were examined to support energy efficiency, conservation, and demand response in compliance with the Delaware Energy Conservation & Efficiency Act of 2009.**

Staff has concerns with three resources included in the IRP Reference Case: (i) Combined Heat and Power ("CHP" or "cogeneration"); (ii) Demand Response ("DR") programs; and (iii) Energy Efficiency ("EE") programs. The overall DSM cumulative effects reflected by Delmarva in the IRP Reference Case could be overstated and Staff recommends that the next IRP address Staff concerns. The result of the potential overstatement of DSM effects in the IRP Reference Case would result in an understatement of the resource costs necessary to provide the Standard Offer Service. Although Staff cannot conclude at this time that the overall resource portfolio recommendations of Delmarva would be substantially different under a different DSM scenario, it should be examined in the next filing.

Combined Heat and Power

The IRP Reference Case included 9MW and 61,503MWH of CHP demand and energy for 2013 increasing to 68MW and 468,633MWH by 2022 representing an increase of approximately 760%.[12] Based on these estimates, CHP contribution to cumulative energy savings ranges from less than 4% in 2013 to more than 11% in 2022. The CHP contribution to cumulative demand savings range from less than 10% in 2013 to almost 25% in 2022.

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[10] For example this include but not limited to: supply resource options, demand response, energy efficiency, renewables, transmission, natural gas delivery

[11] IRP page 46.

[12] *Id*, Table 2 and 3, page 49.

Delmarva relies on the *ICF CHP Market Model* performed for the 2010 IRP[13] to estimate the potential for CHP in the Company's Delaware service territory. The starting point for the *ICF CHP Market Model*, however, is an estimate of the CHP Technical Market Potential described as the "technically suitable CHP applications by size and by industry."[14]

Staff does not believe that Technical Market Potential is an appropriate first step to evaluate the potential for CHP in Delaware. Technical Market Potential is generally described as:

> **"[T]he theoretical maximum amount of energy use that could be displaced by efficiency, disregarding all non-engineering constraints such as cost-effectiveness and the willingness of end-users to adopt the efficiency measures. It is often estimated as a "snapshot" in time assuming immediate implementation of all technologically feasible energy saving measures, with additional efficiency opportunities assumed as they arise from activities such as new construction."**[15]

The *ICF CHP Market Model* identifies only three actual CHP facilities in Delaware; only one of which (as of 2010) was located in the Delmarva service territory. As described in *ICF CHP Market Model*, this was a 4.5MW facility with an installation year of 1952. The basis for Delmarva's estimate of 9MW for 2013 is not provided. Apparently the *ICF CHP Market Model* relies on specific customer demand, energy and load factor data for commercial and industrial customers to estimate a technical potential for cogeneration that does not reflect specific customer thermal capabilities or other factors that could result in the installation of cogeneration facilities.

Staff suggests that, rather than reflect a theoretical maximum potential for CHP without regard for cost-effectiveness and customer willingness to pursue cogeneration, a more realistic starting point for estimating the potential for CHP in Delaware should be chosen. In Staff's view a better first step would be either: (1) an Achievable Potential (amount of energy use that efficiency can realistically be expected to displace assuming the most aggressive program scenario possible, e.g., providing end-users with payments for the entire incremental cost of more efficiency equipment); or (2) and preferably, a Program Potential (the efficiency potential possible given specific program funding levels and designs).[16] Ultimately, the estimate for CHP energy and demand savings in Delaware included in the Company's IRP Reference Case should be based on a specific assessment of thermal and other characteristics of Delaware customers in Delmarva's service territory. Should the Company also desire to reflect the more expansive theoretical maximum potential for CHP as a first step, a sensitivity analysis in the IRP Reference Case could also be provided.

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[13] http://depsc.delaware.gov/documents/Appendix%2010.pdf

[14] IRP, page 56.

15 *Guide for Conducting Energy Efficiency Potential Studies*. Prepared by Philip Mosenthal and Jeffrey Loiter, Optimal Energy, Inc., page 2-4 www.epa.gov/ceactionplan http://www.epa.gov/cleanenergy/documents/suca/potential_guide.pdf

[16] *Id.*

Demand Response

Delmarva included in the IRP Reference Case projections for two DR programs that have been approved by the Commission, i.e., Dynamic Pricing – Peak Energy Savings Credit ("PESC") and Residential Direct Load Control (RS DLC). Additionally, the Company included projections for a Non-Residential Direct Load Control program which will be filed for Commission consideration later in 2013.

As described by Delmarva: **The approved and projected programs have been designed specifically to participate in available demand response market opportunities within the PJM capacity and energy markets.**[17] Additionally, the Company recognizes in footnote 24: **PJM market demand response rules are evolving and therefore existing rules will change over time. Delmarva Power participates in the PJM stakeholder process related to these market rule changes.**[18]

As an initial matter, Staff supports PJM stakeholder initiatives that address costs paid by customers for demand response capacity that does not have a reasonable expectation for deliverability. A potential issue for Staff, however, is whether the stakeholder process could result in PJM market changes that unreasonably impact the continued development of demand response as well as existing DR.

Staff has been monitoring the PJM stakeholder process and, as a result of a report issued by the Independent Market Monitor for PJM ("IMM"),[19] Staff has concerns that the reliance by the Company on revenues from DR participation in the PJM capacity markets could be significantly altered by current PJM stakeholder initiatives. In the Replacement Capacity Report, the IMM makes a number of recommendations -- all of which have been either finalized (e.g., DR Plan Enhancements currently before the FERC in Docket No. ER13-2108) or currently being studied by PJM stakeholders.

Among the recommendations in the Replacement Capacity Report was a limitation of DR to participation in the Third Incremental Auction ("IA"). If this potential limitation of DR to participation in the Third IA (which is currently in-progress)[20] was finalized and approved by the PJM Members, then the structure, design, and cost-effectiveness of the Company's currently approved and projected DR programs would need to be reviewed. As directed by PJM's Markets and Reliability Committee, the Capacity Senior Task Force is currently addressing the RPM Replacement Capacity issue that could result in excluding the participation of DR in the Base

[17] IRP page 47
[18] *Id.*
[19] **Analysis of Replacement Capacity for RPM Commitments: June 1, 2007 to June 1, 2012** ("Replacement Capacity Report") http://www.monitoringanalytics.com/reports/Reports/2012/IMM_Report_Replacement_Capacity_Activity_20121211.pdf
[20] PJM RPM Replacement Capacity Issue page http://www.pjm.com/committees-and-groups/issue-tracking/issue-tracking-details.aspx?Issue=%0D0E7DC9-432F-4207-B27D-9EF7D07ADC25%

Residual Auction or otherwise limit the availability of PJM capacity revenues. The current Work Plan for this stakeholder process shows a completion and presentation for PJM Member vote in November and a FERC filing by December 1, 2013.[21]

On January 31, 2012 the Commission issued Order No. 8105 approving Delmarva's proposal for implementation of a dynamic pricing tariff in PSC Docket No. 09-311. In Order No. 8105, the Commission observed:[22]

> **Delmarva expects to reduce peak demand by 111 MW by the year 2025, and intends to monetize this demand reduction through the existing PJM market by bidding it into the PJM Reliability Pricing Model ("RPM") Base Residual Auction ("BRA") and the RPM incremental auctions ("IA") and/or through bilateral agreements. The current high capacity prices in the Delaware region provide a significant financial opportunity for the Dynamic Pricing Program.**

The Commission also recognized:

> **. . . for delivery years 2012-14, Delmarva may not receive sufficient revenues in the PJM IAs to pay for customer response under the Program; in this event, any underrecoveries will carry forward as a regulatory asset into the 2015-2016 delivery years, to be offset by revenues from the BRAs and IAs. Delmarva will regularly monitor DR forecasts to ensure that its bids into the PJM capacity markets are reasonable and will take reasonable action to minimize customer impacts; including buying back MWs in an IA prior to the delivery period if a short position is forecasted. *It will monitor total PJM revenues due to it based on BRA and IA results and the timing of PJM revenues versus the timing of rebate payments to customers. Delmarva will actively manage the Program and make reasonable efforts to avoid significant variances.*[23]**

Staff suggests that if PJM implements significant revisions to the participation of DR in the BRAs, Delmarva should also consider alternative approaches to dynamic pricing in addition to modifications to the existing programs (such as revising/lowering the level of the savings credit) to avoid differences between PJM revenues and the current program implementation costs. For example, rather than the current structure of the Peak Energy Savings Credit, Delmarva should consider utilizing the advanced metering data available from the investment in digital meters to develop critical peak pricing to influence customer usage during high cost periods that does not require funding for credits/rebates or rely on estimating baselines and avoided energy.

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[21] http://www.pjm.com/~/media/committees-groups/task-forces/cstf/20130826-rpm/20130826-item-04-cstf-work-plan.ashx
[22] Order No. 8105, ¶ 21. http://depsc.delaware.gov/orders/8105.pdf
[23] *Id, ¶ 37* emphasis added.

Staff would note that critical peak pricing structures have been developed by other utilities that rely on a very high peak period price (e.g., $0.75/kWh) during a few hours in a limited number of event days (approximately 1% of summer hours) and average or lower than average prices during all other hours. [24] Such critical peak pricing structures could also have substantial peak load savings as well as high customer acceptance.[25] In addition to greater utilization of the investment in digital meters for advanced billing options, Staff would repeat its request that the Company more actively pursue earlier implementation of other opportunities to increase the benefits from the investment in the Advanced Meter Infrastructure. Such opportunities would include: prepaid service; load limiting; voltage reduction; etc.

Energy Efficiency

Pursuant to the Delaware Energy Conservation & Efficiency Act of 2009[26] Delmarva is required to achieve at least a level of energy savings equivalent to 15% of its 2007 electricity consumption by 2015.[27] Additionally, pursuant to *29 Del. C. §8059,* the Delaware Sustainable Energy Utility ("SEU") is responsible for implementing energy efficiency and conservation programs in Delaware. A total of 1,329,054MWH was determined to be the 2015 energy reduction goal, and for planning purposes in the IRP Reference Case Delmarva assumed a straight-line ramp-up of annual energy savings between 2011 and 2015. For purposes of the IRP Reference Case, Delmarva further assumed that the goal for each successive year between 2015 and 2022 would continue to reflect 15% of the mandated 2007 energy consumption.

Staff has had increasing concerns with the Company's assumptions supporting achievement of the legislatively-mandated energy savings goals in the IRP Reference Case since the earliest IRP workshops reflected in Delmarva's 2010 IRP in Docket No. 10-2. [28] In the 2010 IRP Staff Report, the role of demand side resources in meeting SOS needs through energy efficiency programs through the SEU was identified as a key area of interest.[29] Based on information received in the 10-2 docket, the 2010 IRP Staff Report stated that based on the progress that had been achieved in meeting EERS goals "the success of the [SEU] programs' efforts in achieving EERS targets for MWH savings for 2011 is doubtful, and success for 2015 goals will depend on the nature of ongoing development and maturation of programs, funding availability, and participation rates."[30]

While addressing the legislatively-mandated energy savings goals of the Act, the Company does not address the legislatively-created conflicts between the SEU responsibility for implementation, funding and payment for energy efficiency and Delmarva's responsibility for

[24] For example, http://www.demandresponsetownmeeting.com/wp-content/uploads/2012/03/1A-0830-JIMENEZ-.pptx
[25] http://www.demandresponsetownmeeting.com/wp-content/uploads/2012/03/1A-0830-GEORGE.pdf
[26] 26 *Del. C.* §§1500-1507 ("Act").
[27] *Id. at 1502(a)(1).*
[28] **Evaluation of Delmarva Power 2010 Integrated Resource Plan** Comments and Discussion of Key Issues May 31,2011 ("2010 IRP Report") http://depsc.delaware.gov/IRP/PSC%20Staff%20IRP%20Comments.pdf
[29] *Id.* Page 1.
[30] *Id.* Pages 4-5.

achieving the energy savings goal. The Act also created the EERS Workgroup to consider various energy efficiency issues which issued the "State of Delaware Energy Efficiency Resources Standards Workgroup Report" in June 2011 ("EERS Report"). The EERS Report addressed the legislatively-created conflicts between the SEU and the Company in detail.

Section 1.3 of the EERS Report summarized several conflicting provisions between the EERS and SEU statutes and recommended legislative attention as follows:[31]

> **Titles 26 and Titles 29 of the Delaware Code provide for conflicting responsibility for implementing EERS requirements. Title 26, Chapter 15 requires each affected energy provider to achieve the savings specified in the statute.[32] For the cooperative and municipals, Section 1505(b) states that each individual affected energy provider may determine how best to fund activities necessary to achieve the energy savings goals within its service territory and implement programs as it sees fit.**
>
> **However, Delaware Title 29, Chapter 80, Subchapter II, Section 8059(b) and (c) creates the Sustainable Energy Utility (SEU) and charges the SEU with designing and implementing energy efficiency programs in the state. The Statue directs funding to the SEU to accomplish the energy savings goals under Section 1505(f) and (j).Title 26, Chapter 15, Section 1505(g) goes a step further and prohibits the Public Service Commission from approving any regulated utility cost recovery for programs designed to achieve energy efficiency savings.**
>
> **The conflicting directives in the statute make it unclear who would be accountable for EERS performance results and how the State could develop enforcement mechanisms. Holding regulated affected energy providers responsible for outcomes without any ability to design and administer efficiency programs may create unintended issues.**

The EERS Workgroup concluded with a finding in section 9.1 regarding the feasibility of the EERS as follows:[33]

> **The Workgroup finds that Delaware is unlikely to achieve the legislated efficiency targets given the current and prospective funding levels and the high participation rates that would be necessary to meet such a short timeline. Modifications are required in some or all of the following: 1) funding for efficiency investments; 2) efficiency targets; and/or 3) the timeframe to accomplish the targets.**

The SEU was a participant in workshops held by the Company to address IRP issues. At the July 31, 2013 workshop, the SEU made a presentation that included: its 2013 Annual Budget, its

[31] EERS Report, page 2.
[32] Title 26, Chapter 15, Section 1502 (a)
[33] EERS Report, page 60.

current programs, and its 2014 possible programs.[34] The SEU identified that its current budget is approximately $8 million (state wide) and its current and future programs reflect that level of available funding. There were no estimates of energy savings provided for the SEU's current and future programs. Given the level of SEU funding, the existing legislatively-created conflict between the SEU and Delmarva, the practical limitations for implementation of specific energy efficiency programs (even if the legislatively-created conflicts were resolved),[35] the Company should no longer include in future IRP filings any assumption that SEU programs will achieve the 15% legislatively-mandated energy savings goal.

For the IRP Reference Case in the instant docket, the Company has assumed achievement of a portion of the 2015 energy savings goals based on a combination of its own energy efficiency initiatives, e.g., transmission and distribution system improvements, CHP, and AMI enabled Dynamic Pricing. The Company provided a chart showing approximately 29.4% of the 2015 energy savings goals from Delmarva energy efficiency initiatives.[36] Delmarva further assumed unspecified 15.9% SEU Residential EE programs and unspecified 54.8% SEU Non-residential EE programs to achieve the overall legislatively-mandated energy savings goal of 1,329,054MWH in 2015. While the Company cannot be faulted for assuming that under current Delaware law the SEU has the responsibility for implementing and funding the energy efficiency programs, Staff concludes there is no realistic scenario where the energy efficiency goal beyond the 29.4% of Delmarva's own energy efficiency measures could be achieved by 2015.[37]

At the request of stakeholders, Delmarva conducted a sensitivity analysis in the IRP to assess the impact of not achieving the legislatively-mandated energy savings goal for the 2013-2022 planning horizon. For purposes of this sensitivity analysis, Delmarva assumed that 75% of the expected energy efficiency savings were not achieved in 2015 and that this shortfall was gradually reduced until eliminated at the end of 2022. The Company calculated several types of costs that would be incurred as a result of not achieving the expected energy savings that included the additional capacity and energy supply costs, as well as the increased cost of additional Renewable Energy Credits that Delmarva would have to purchase. The accumulated costs that would be incurred over the 2012 – 2022 planning period under this scenario was identified by the Company in Table 3 as over $230 million.[38]

Additionally, as requested by the parties, the Company provided at the July 31workshop the residential bill impacts of costs identified in the sensitivity analysis:

[34] SEU presentation also included a history and Staff applauds its transition to much more effectively managed organization.
[35] Staff would also note that the greatest energy savings potential occurs in the summer (when usage is highest) and energy efficiency programs for the summer of 2014 is not realistic.
[36] IRP Chart 11, page 71.
[37] To the extent that the Company's estimates of energy savings from CHP were affected by reliance on more realistic estimates of potential, the assumed level of energy savings achieved from Company initiatives could be overstated.
[38] *Id*, page 77.

Table 1 RESIDENTIAL BILL IMPACT ENERGY EFFICIENCY GOALS NOT ACHIEVED

PLANNING PERIOD	2013/14	2015/16	2017/18	2019/20	2022/23
AVERAGE MONTHLY SUPPLY COMPONENT	$5.33	$9.54	$11.23	$13.84	$15.55
AVERAGE MONTHLY RPS COMPONENT	$0.58	$1.09	$1.83	$2.66	$4.47
TOTAL AVERAGE MONTHLY RS CUSTOMER BILL INCREASE DUE TO NOT ACHIEVING ENERGY SAVINGS GOAL	$5.91	$10.62	$13.06	$16.50	$20.02
PLANNING PERIOD INCREASE %		180%	123%	126%	121%
CUMULATIVE PLANNING PERIOD INCREASE % FROM 2013/2014		180%	221%	279%	339%

While the cost for not achieving the legislatively-mandated energy savings goals have been quantified,[39] a comparable estimate of the costs to implement the energy efficiency programs (that included financing, return and/or taxes) was not available. The issue of the cost to achieve the legislatively-mandated energy savings goals, however, was addressed by the EERS Workgroup as follows:[40]

> **If fully implemented, the efficiency charge is estimated to produce approximately $9 million dollars annually or approximately $45 million over the next five years. Conversely the estimated cost to meet the legislative objectives is $284-849 million (with an average estimate of $481 million) over the next five years.**

Based on program costs incurred by Delmarva to comply with EmPOWER MD energy efficiency programs, an estimate that excluded financing, return and/or taxes was provided by the Company to meet the legislatively-mandated energy efficiency goals and was approximately half of that estimated by the EERS Workgroup. Regardless of the ultimate bill impact of achieving energy efficiency, customers participating in the energy efficiency programs would see a bill saving due to reduced energy usage that should theoretically, if the program is meeting its cost-effective parameters, overcome the bill impacts of the program. As discussed below, however, the Commission should be aware of issues beyond bill impacts of implementing energy efficiency programs.

Should the accountability conflicts identified by the EERS Workgroup be resolved, there are a variety of issues that still concern Staff beyond the absolute level of costs to be recovered for the implementation and bill impacts of energy efficiency programs. In Staff's opinion, the main issue for future Commission consideration is whether the costs and benefits for the

[39] At approximately $230 million as described above.
[40] EERS Report, page 60.

implementation of the energy efficiency programs are fairly and equitably distributed between program participants and non-participants.[41]

There are a variety of cost-effectiveness tests that could be applied to energy efficiency programs that (depending on how the accountability conflicts are resolved by the legislature) could come before the Commission for cost recovery.[42] Some cost-effectiveness tests look at a narrow view of costs and benefits, e.g., the Participant Test that looks solely at a comparison of costs and benefits of the customer installing the measure,[43] to a more broad view of costs and benefits, e.g., the Total Resource Cost Test that make a comparison of program administrator and customer costs to utility resource.[44] The only cost-effectiveness test that addresses the impact of implementation of energy efficiency (and demand response) programs on participant versus non-participants is the Ratepayer Impact Measure ("RIM"). The RIM Test is a comparison of administrator costs and utility bill reductions to supply-side resource costs.[45] By ensuring that total supply side resource costs paid by all ratepayers, i.e., participants and non-participants, are reduced by more than the cost of implementing the program, all ratepayers achieve a cost effective benefit from the program.

Staff recognizes that the RIM Test is seen by some as an unnecessary barrier/hurdle to the implementation of energy efficiency programs. To avoid potentially narrowing the availability of energy efficiency programs by including the results of the RIM Test when evaluating cost recovery of energy efficiency programs, Staff would recommend that the Commission should rely on the RIM Test as a guide rather than an absolute threshold. By using the calculation of the RIM Test for energy efficiency programs only as a guide for approval of cost recovery, the Commission could recognize on a case-by-case basis overarching policy issues that would justify approving cost recovery for an energy efficiency that was less than cost effective under the RIM Test.[46]

Renewable Energy Portfolio

The General Assembly has stated that the benefits of electricity from renewable energy resources benefit the public and that electric suppliers and consumers share an obligation to develop a minimum level of these resources. The intent of the Renewable Energy Portfolio Standards Act (REPSA) is to establish a market for electricity from these resources in Delaware and to lower the cost to consumers of electricity from these resources.

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[41] Staff will not address here the fundamental issues of Evaluation, Measurement and Verification (EM&V) of energy efficiency programs or other issues regarding the identification, prioritization and implementation of energy efficiency programs.

[42] National Action Plan for Energy Efficiency (2008). *Understanding Cost-Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers*. Energy and Environmental Economics, Inc. and Regulatory Assistance Project. www.epa.gov/eeactionplan
http://www.epa.gov/cleanenergy/documents/suca/cost-effectiveness.pdf

[43] Will the participants benefit over the measure life?

[44] Will the total costs of energy in the utility service territory decrease?

45 Will utility rates increase?

46 For example, the Commission could adopt a general guideline of approving energy efficiency programs that had a ratio of greater than .8 on the RIM Test, with the discretion to depart from that guideline on a case-by-case basis to reflect other policy considerations.

In June 2012[47], Delmarva became responsible for the RPS compliance obligation for the corresponding retail sales of all distribution customers.[48] One of Delmarva's objectives is to provide RECs/SRECs through a diverse portfolio of renewable energy resources at a reasonable cost.[49] Delmarva has long term contracts for both energy and RECs, long term contracts for SRECs, and RPS offsets from the qualified fuel cell generation and short term market purchases.

In 2010, the General Assembly amended the Renewable Energy Portfolio Standards[50] by amending Schedule 1 and providing cost caps on the cost of complying during any compliance year. This permitted the freezing of the minimum cumulative solar photovoltaics (PV) requirement for regulated utilities if the total cost of complying with the requirement during a compliance year exceeds 1% of the total retail cost of electricity or freezing the minimum cumulative Eligible Energy Resources requirement for regulated utilities if the total cost of complying with the requirement during a compliance year exceeds 3% of the total retail cost of electricity. For the solar cap, the total cost of complying shall include the costs associated with any ratepayer funded state solar rebate program, SREC purchases, and solar alternative compliance payments. For the Eligible Energy Resources cap the total cost of complying shall include the costs associated with any ratepayer funded state renewable energy rebate program, REC purchases, and alternative compliance payments.[51] The Division of Energy and Climate has initiated a rulemaking proceeding to determine among other issues the cost of complying with REPSA. According to the 2012 IRP, the customer bill impact to comply with REPSA is forecasted to affect a typical 1000 kWh residential monthly bill on a non-netted basis by $6.60 per month for compliance year 2013 (June 1, 2013- May 31, 2014). Delmarva has forecast this to increase to $15.15 a month in compliance year 2022. These costs are calculated on the load forecast being reduced by meeting the 2015 energy efficiency targets[52].

If the 2015 energy efficiency targets cannot be met until year 2022 instead of 2015, and assuming that in 2015 25% of the of the energy efficiency and conservation program reduction goals would have been met, an additional 6,600 SRECs and 140,000 RECs will have to be purchased.[53] This equals a total incremental RPS cost of over $3.3 million dollars for the PJM Planning Period 2012-2015[54] and an incremental amount of over $11 million for the 10- year planning horizon. This would result in an overall bill impact for a typical residential customer of $7.14 per month for compliance year 2013 up to almost $18.00 per month in 2022/2023.[55] The difference between the residential bill for the reference case with the EE impacts and the additional RPS costs due to the delay in EE is $0.58 in 2013 and increasing of $4.47 in 2022/2023.

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[47] Senate Bill 124
[48] Certain industrial customers can be exempted from the RPS requirement.
[49] IRP page 20
[50] SS No. 1 for SB. No. 119
[51] 26 Del. C. §354 (i) (j)
[52] 26 Del. C. §1502
[53] IRP 2012 RPS Overview, 5/1/2013, page 15
[54] 2012 IRP pg 77, and Demand Side Management Analysis 2012 Delaware IRP, Steve Sunderhauf, Rick Swink, June 3, 2013 IRP Workshop, page 8
[55] Residential Customer Bill Impact Forecast handed out at July 31, 2013 workshop.

In January 2013, Congress temporarily extended the production tax credit (PTC) for wind installations that started construction in 2013. The bill also allowed wind and other eligible renewable energy sources to qualify for a 30% investment tax credit (ITC) in lieu of the PTC for facilities that began construction in 2013. At this time, it is uncertain whether Congress will extend the PTC or the ITC after 2013. The existing ITC (30% of the cost) for residential households installing renewable energy technologies (geothermal heat pumps, small wind turbines, solar energy systems) expires at the end of 2016[56]. According to EIA's 2013 Annual Energy Outlook, expiration of the PTC and ITCs will likely slow adoption of renewable technologies [57] and after 2016, growth through 2030 is expected to be minimal.

The majority of the RPS requirements for RECs are fulfilled by wind. PJM in their 2013 Transmission Expansion Advisory Committee Scenario Analysis Update, dated August 8, 2013, states that the targeted installed wind based on state RPS targets by 2028 is 32,300 MW, while the existing installed nameplate capacity is 6,602 MW. As of June 30, 2013, 18,612 MW of nameplate capacity were in the generation request queues for construction through 2024. If the installation of wind slows, there could be an issue meeting the RPS obligations and the ramp up of RPS in many PJM states could cause upward price pressure on RECs in coming years. Calendar year 2012 has seen a dramatic increase in REC prices from approximately $3.00 to $14.00/REC. If the energy efficiency target is delayed, according to Delmarva's analysis for REC requirements including the use of the Bloom offsets, they will need to purchase additional RECs in Compliance year 2012 and thereafter[58] and this would increase the customer impact in addition to the potential price increase of RECs.

Staff recommends that Delmarva perform an updated RPS compliance analysis using current information including but not limited to load obligation and appropriate DSM/DR programs, Bloom offset appropriation, and market pricing and forecast for RECs/SRECs for the 10- year period to determine:

1) RPS (RECs/SRECs) obligation by year;
2) Cost of RPS obligation in total and bill impact by residential rate class for a typical customer, commercial and industrial; and
3) If additional contracts (short or long term) are needed for RECs and SRECs.

Staff recommends, pending approval of the Division of Energy and Climate's (previously Delaware Energy Office) rulemaking on the cost caps for solar and Eligible Energy Resources, an analysis to be completed by the Division and Delmarva to determine if the RPS obligation exceeds the cost caps for the compliance year when the regulation becomes effective.

[56] Federal Tax Credits for Consumer Energy Efficiency http://www.energystar.gov/index.cfm?c=tax_credits.tx_index
[57] 2013 Annual Energy Outlook -Solar photovoltaics and wind dominate renewable capacity growth
[58] Spreadsheet from Delmarva "REC (Wind) RPS Requirements – Update- Delayed Energy Efficiency – assumed 25% of the Bloom offset was used for SRECs.

Staff recommends that no RECs or SRECs beyond the level prescribed by the 2010 legislation be purchased by Delmarva, except for specific reasons[59] when RECs/SRECs maybe banked to fulfill the minimum cumulative percentage requirements in a subsequent compliance year. In addition, after completion of the analysis recommended above by Staff, Delmarva should consider its REC/SREC procurement plan to determine whether it will be beneficial to procure additional, long-term RECs in the near future.

Conclusions and Recommendations

Staff appreciates the effort Delmarva put forth in creating its IRP and the efforts of all participants in the IRP workshops.

- Staff recommends a study by an independent consultant with recommendations to lower the cost of electricity in Delaware[60]. This study would consider current and proposed PJM rules that would effect the cost of electricity in Delaware. These recommendations would be focused on the rate impact for Delmarva ratepayers but also take into consideration the overall effect to the cost of electricity in the state.

- Staff recommends that Delmarva in its subsequent IRP filing no longer rely on the broad technical potential as a starting point for Combined Heat and Power estimates or include in the IRP Reference Case the assumption of SEU programs to achieve the 15% legislatively-mandated energy savings goal. Should approval of cost recovery for energy efficiency programs come before the Commission in the future, Staff would recommend that the Rate Impact Measure Test be used as a guideline.

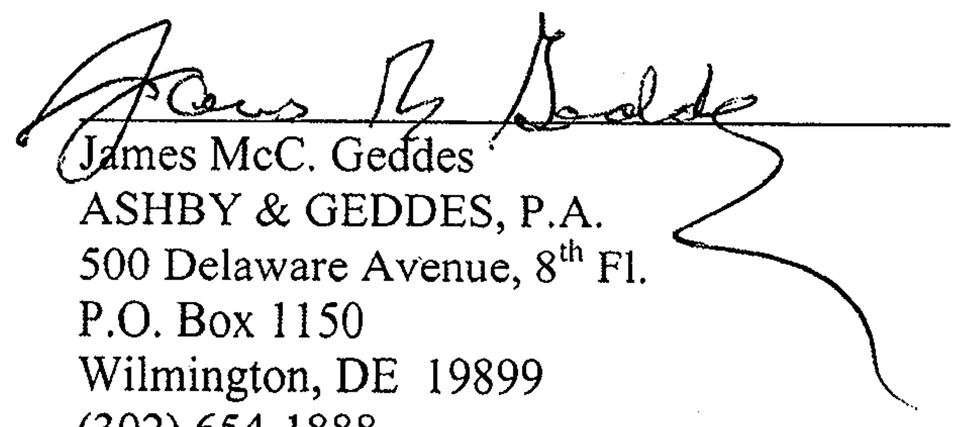
- Delmarva should also consider alternative approaches to dynamic pricing in addition to modifications to the existing program (such as revising/lowering the level of the savings credit) to avoid differences between PJM revenues and the current program implementation costs.

- Staff recommends that no RECs or SRECs beyond the level prescribed by the 2010 legislation be purchased by Delmarva, except for specific reasons[61] when RECs/SRECs maybe banked to fulfill the minimum cumulative percentage requirements in a subsequent compliance year.

[59] Such as cost effective reasons, but the intention is not to exceed the minimum percentage by any substantial percentage.
[60] For example the Study could include, but not be limited to, the following areas: supply resource options, demand response, energy efficiency, renewables, transmission, natural gas delivery
[61] Such as cost effective reasons, but the intention is not to exceed the minimum percentage by any substantial percentage.

- Staff also recommends that as soon as possible after the approval of the rule making concerning the cost caps for RECs and SRECs, the Division of Energy and Climate and Delmarva determine if the RPS obligation exceeds the cost caps for the compliance year when the regulation becomes effective.

Respectfully Submitted on Behalf
Of the Commission Staff,



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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE

IN THE MATTER OF THE DELMARVA POWER AND LIGHT COMPANY'S 2012 INTEGRATED RESOURCE PLAN (FILED DECEMBER 7, 2012)	))))	PSC DOCKET NO. 12-544

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing **Report From The Delaware Public Service Commission Staff On Delmarva Power and Light Company's 2012 Integrated Resource Plan** was served via electronic mail this 16th day of September 2013 to the attached service list.

James McC. Geddes

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SERVICE LIST
DP&L'S 2012 INTEGRATED RESOURCE PLAN
PSC Docket No. 12-544
As of 9/10/13

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