

**INTERIM REPORT  
OF THE  
PUBLIC SERVICE COMMISSION OF MARYLAND  
TO THE  
MARYLAND GENERAL ASSEMBLY**



**PART I: OPTIONS FOR RE-REGULATION AND NEW  
GENERATION**

**DECEMBER 3, 2007**

## I. INTRODUCTION AND EXECUTIVE SUMMARY

This is the first in a series of Interim Reports by the Maryland Public Service Commission (the “PSC”) to the Maryland General Assembly regarding the state of the electricity markets in Maryland at the end of 2007. As directed in Senate Bill 400 (“S.B. 400”),<sup>1</sup> Part I offers the PSC’s recommendations and analysis regarding options for “re-regulating” Maryland’s electricity markets and for obtaining new generation and transmission resources in our State. Additional Parts relating to stranded costs, the impact of the wholesale electricity markets on retail rates and other issues will follow in the weeks to come.

The issues discussed in this Part are framed by a factual premise about which there is no ambiguity or room for serious dispute: *unless steps are taken now, the State of Maryland faces a critical shortage of electricity capacity that could force mandatory usage restrictions, such as rolling black-outs, by 2011 or 2012.* We face this crisis because Maryland sits in a highly congested portion of the regional electric transmission system (which makes it difficult to bring more power in) and because we use more electricity than is generated here. We can respond essentially in two ways: we can add more capacity, either through new generation or transmission, or we can reduce the amount of electricity we use. At the end of the day, we will need to do some of both.

*We cannot, however, do nothing.* Although the now-separated wholesale and retail electricity markets are structured ostensibly to create price incentives for new generation or transmission, these markets have not responded adequately or quickly enough to forestall Maryland’s looming capacity shortage. These capacity shortages and transmission constraints also work to the serious economic disadvantage of Maryland consumers, who pay much higher than average prices for wholesale (and thus retail) electricity as these markets currently are structured. These higher prices make the *status quo* lucrative for existing generators rather than motivating them to spend money to build more (which would bring prices down). In our view, it is not in the public interest to continue to rely exclusively on market forces to address Maryland’s reliability concerns and the high wholesale electricity prices Marylanders pay.

The data and analysis the PSC has gathered, itself and through consultants, reveal convincingly that we do *not* have the luxury of waiting for the markets to address Maryland’s reliability and pricing problems. Instead, the PSC recommends and plans to undertake a series of interventions designed to respond to these problems directly:

- *First*, the PSC will, if necessary, force an increase in the available supply of electricity, both to ensure a reliable supply and to relieve some of the upward pressure on wholesale

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<sup>1</sup> Ch. 549, Acts 2007.

prices. The PSC will monitor the January and May 2008 capacity auctions closely and will direct Maryland's electric utilities to enter into new, long-term contracts to induce the electricity supply in Maryland unless existing or new generators substantially increase their committed electricity capacity supply;

- *Second*, the PSC will, as part of a pending proceeding, require the utilities to implement aggressive and cost-effective demand management and energy conservation programs, consistent with Governor Martin O'Malley's EmPower Maryland initiative;
- *Third*, the PSC will rule shortly on whether, and if so how, the process by which utilities purchase electricity for Standard Offer Service ("SOS") customers could be modified to achieve better and more stable prices for ratepayers; and
- *Fourth*, the PSC will continue to expand and elevate its presence as an advocate at FERC, PJM and in other forums on behalf of Maryland's energy future, reasonable rates, and fairness in the wholesale electricity markets.

These obviously are not the final and only actions we and others will take. The electricity markets are extremely complex, and the wisdom or economic viability of other (especially longer-term) solutions will depend on a variety of different factors and developments, many of which lie outside the PSC's control. The actions we recommend here represent important and meaningful first steps designed to counter and correct the structural unfairness of the current markets in the short- and intermediate term. We will, of course, continue to review and analyze these issues in the months and years to come and to take the steps necessary to ensure that Maryland's electricity supply is reliable and that the markets and companies treat Maryland consumers fairly.

The PSC's consultants have analyzed the viability and economic impact of a broad array of longer-term new generation and transmission options. These analyses, which are the result of a rigorous economic analysis of different options against a set of base assumptions regarding the state of Maryland's electricity market, yielded important insights about the relative merits of different available options:

- *First*, transmission offers the highest total economic value added ("EVA") compared to the costs. New

transmission affects both capacity and energy costs because it relieves the physical transmission constraints in the grid. From this perspective alone, it is the most attractive option economically. It is, however, the “option” that is the most uncertain because its fate resides largely in the hands of other state and federal officials;

- *Second*, the nuclear case provides the highest cumulative EVA of all scenarios. Given the lead time associated with such a project, however, price benefits are not realized until 2017, about 10 years from now;
- *Third*, the addition of 1200 MW of excess power (beyond the amount needed to maintain reliability) from combined cycle gas plants provides the most substantial benefit in the short term and intermediate term;
- *Fourth*, the wind option our consultants modeled does not provide net economic benefits in either the short- or long term. Wind does, however, represent a source of clean, carbon-free power; and
- *Fifth*, full attainment of the EmPower Maryland Goal yields a large and positive EVA for Maryland ratepayers, greater than that of the 1,200MW of combined cycle gas option.

Our recommendations and analysis flow in large measure from comprehensive studies prepared (at the PSC’s direction and under its supervision) by a team of lawyers and consultants led by the law firm of Kaye Scholer LLP (“Kaye Scholer”) and the economics consulting firm of Levitan & Associates, Inc. (“Levitan”). These studies are attached to this Part and posted on the PSC’s website.<sup>2</sup> Kaye Scholer’s study on re-regulation options (the “Kaye Scholer Report”) reviewed electric restructuring in Maryland and elsewhere, examined certain similarly situated states’ efforts to “re-regulate,” then offers and analyzes five potential “re-regulation” options, some of which could be considered and implemented in parallel.<sup>3</sup> Levitan conducted a

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<sup>2</sup> The PSC’s website address is [www.psc.state.md.us](http://www.psc.state.md.us).

<sup>3</sup> It is worth noting up front that we and our consultants use the term “re-regulation” – the word used in S.B. 400 – more broadly than simply to mean a return to the pre-restructuring regime. Although, as discussed below, the Kaye Scholer Report briefly discusses the hypothetical possibility of returning Maryland’s generation fleet to its regulated utilities, that “option” is an unrealistic and prohibitively expensive approach that both we and they ruled out quickly. Throughout both documents, we use the term “re-regulation” to encompass the range of possible PSC or legislative responses to the deregulated markets’ failure to ensure reliable, cost-effective electricity for Maryland consumers.

detailed and rigorous economic analysis (the “Levitan Report”) of the costs and benefits of options for new electricity capacity in the state, including new transmission, conservation and demand management, and various types of new power sources, such as gas, nuclear, coal, and wind. We attach both reports in full to this Interim Report so that the General Assembly and the public can review the details for themselves.

The Kaye Scholer and Levitan Reports represent only a part of the PSC’s information-gathering and analytical processes, however. Over the preceding nine months, the PSC has examined a wide array of issues relating to Maryland’s electricity supply, the prices Maryland residential customers pay for electricity, the wholesale markets in which Maryland’s electric utility companies purchase their power supplies, and programs for low-income residents, such as the Electric Universal Service Program (“EUSP”). The PSC identified a number of issues as part of its proceedings in Case No. 9099, which addressed Baltimore Gas & Electric Company’s (“BGE”) proposed standard offer service rate increase. The PSC also has responded to letters from Governor Martin O’Malley, who asked the PSC to study and investigate certain issues relating to the Maryland electricity markets, particularly the relationship between BGE and its parent company, Constellation Energy Group, and options for lowering the cost of electricity for low-income residents.

The PSC has utilized a variety of different methods to examine the Maryland electricity markets. The PSC has initiated numerous proceedings, including both contested case and quasi-legislative proceedings, served subpoenas and data requests, held hearings, retained outside experts, and in some cases conducted site visits. As part of the proceedings bearing on this Interim Report, the PSC:

- Conducted 13 days of contested case proceedings;
- Conducted 3 days of quasi-legislative proceedings;
- Received testimony and comments from 59 witnesses and experts; and
- Received and reviewed more than 1,200 pages of written testimony and reports.

Finally, the PSC has sought and obtained additional information regarding the wholesale electricity markets and their impact on Maryland from the Market Monitor of PJM Interconnection, Inc., the Regional Transmission Operator that operates Maryland’s electricity transmission grid (as part of a 14-state network), and PSC Staff have sought and obtained testimony from PJM witnesses in recent proceedings relating to wholesale electricity auctions. These inquiries, the only such inquiries by a state utility commission to our knowledge, have both aided the PSC’s consultants and provided critical perspective on our State’s short- and long-term needs for transmission and generation.

## II. BACKGROUND

### A. LEGISLATIVE HISTORY

During the summer of 2006, the General Assembly convened a special session to pass legislation that would mitigate a proposed 72% rate increase on residential ratepayers by BGE. Senate Bill 1 of that Special Session (“S.B. 1”) capped the increase at 15% through May 2007, but allowed BGE to recover its costs of procuring the electricity that led to the increase through bonds financed (over ten years) by revenue from ratepayers. The General Assembly also imposed on BGE mandatory credits designed to offset in part the costs to ratepayers of financing the deferred costs of the rate increase. The credits consisted of (a) suspension of a portion of an administrative charge BGE collected from ratepayers as a “margin” on the SOS service, and (b) suspension of the collection of charges from rate payers to fund the decommissioning of Calvert Cliffs nuclear facilities. The legislation also attempted to reconstitute the PSC, although that effort was struck down by the Maryland Court of Appeals on September 14, 2006.<sup>4</sup>

Because of the turmoil around the 72% increase and concerns over the operation of Maryland’s electricity market, the General Assembly, as part of S.B. 1, also directed the PSC to conduct a series of inquiries, including options to re-regulate the Maryland market, to review previous actions and settlements of the PSC relating to the transfer of the generating assets of the utilities as part of the restructuring of the Maryland market, and to examine methods used by the utilities to procure power. The General Assembly appropriated \$750,000 for the purpose of conducting the various studies requested, including for the purpose of retaining outside expert assistance. In response, the PSC initiated limited proceedings related to the inquiries in S.B. 1 and, although it did not retain any outside expertise, issued some reports in response to S.B. 1 by the end of 2006.

During the 2007 Session of the General Assembly, and prior to the issuance of more comprehensive reports by the PSC as requested under S.B. 1, two members of the PSC resigned. Coupled with one existing vacancy, the PSC was effectively reconstituted through the appointment of three new members by Governor O’Malley.

In the 2007 Session, the General Assembly renewed its requests to the PSC originally made in 2006 in S.B. 400 and appropriated \$3 million for the studies:

The Public Service Commission shall conduct hearings, including the use of any necessary outside experts and consultants, to study and evaluate the status of electric restructuring in the State as it pertains to the current and future availability of competitive generation to residential and small commercial customers and the structure, procurement, and terms and conditions of

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<sup>4</sup> See *Schisler v. State of Maryland*, 394 Md. 519 (2006).

standard offer service for residential and small commercial customers.

In its evaluation, the Commission shall consider changes that are necessary to provide residential and small business customers the benefit of a reliable electric system at the best possible price, including options for re-regulation, if advisable, and to allow electric companies to develop a portfolio of electricity supply that provides electricity at the lowest cost with the least volatility.

In its evaluation, the Commission shall also consider the availability of adequate transmission and generation facilities to serve the electrical load demands of all customers in the State, pricing and physical constraints on the electrical transmission and distribution grids in the State, and options and policy recommendations to provide an adequate, safe and reliable supply of electricity at a reasonable cost to all customers in the State.<sup>5</sup>

In conducting the analysis described above, the General Assembly specifically directed the PSC to consider the implications of certain approaches:

- Requiring or allowing investor-owned electric companies to purchase electricity by competitive or negotiated contracts of various durations or through other appropriate methods to minimize price volatility;
- Requiring or allowing investor-owned electric companies to construct, acquire, or lease peak-load or other generating plants and associated transmission lines;
- Providing a process, at the time bids by investor-owned electric companies for electricity supply are obtained for the standard offer service, to solicit bids for the procurement of cost-effective energy efficiency and conservation programs and services if energy efficiency and conservation programs are less expensive than electricity generation;

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<sup>5</sup> S.B. 400, § 7(a)(1)-(3).

- Establishing a long-term goal for savings over a period of time of the total residential retail energy consumed in a year in an electric company's service territory through the procurement and implementation of cost-effective energy efficiency and conservation programs and services;
- Providing a process to allow investor-owned electric companies to obtain a portion of their electricity supply for standard offer service through the negotiation of bilateral contracts with wholesale electricity suppliers, either in conjunction with or outside of procurement through competitive wholesale auctions;
- Allowing opt-out aggregation of residential electric customer demand and small commercial electric customer demand by local governments in the service territories investor-owned electric companies;
- Establishing an office of retail market development; and
- Requiring investor-owned electric companies to purchase accounts receivable of electricity suppliers for residential and small commercial accounts.<sup>6</sup>

S.B. 400 directed the PSC to file by December 1, 2007 an interim report that, at a minimum, identifies the issues relating to options for re-regulation and discusses the costs and benefits to residential and small commercial customers of returning to a regulated electric supply market.<sup>7</sup> This Part, along with the Kaye Scholer and Levitan Reports, will serve as the PSC's Interim Report on these issues and, as S.B. 400 directs, the PSC will issue a final report on all matters requested by no later than December 1, 2008.

## **B. THE PSC'S INVESTIGATION OF RE-REGULATION**

In response to the General Assembly's directive, the PSC retained Kaye Scholer, a national law firm with particular expertise in state and federal energy law and electricity markets, and a team of consultants Kaye Scholer assembled, principally

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<sup>6</sup> *Id.*, § 7(b)(1)-(7).

<sup>7</sup> *Id.*, § 2(b)(1).



Levitan.<sup>8</sup> Although S.B. 400 authorized the PSC to utilize an emergency procurement process, the PSC issued a formal Request for Proposals and utilized a competitive bid process that tracked Maryland's standard procurement procedure. Bids were received from numerous qualified bidders and reviewed for technical qualification and cost. The Kaye Scholer team was selected based on its superior expertise in the judgment of the PSC selection committee, which included both Commissioners and Staff, and particularly its prior representation of the California Public Utilities Commission and Connecticut Department of Public Utility Control. The committee also was impressed with Levitan, a nationally known energy consulting firm that has performed analysis for a broad array of public and private clients, including various system operators and, like Kaye Scholer, the Connecticut Department of Public Utility Control.

In addition to hiring outside expertise, the PSC has opened several proceedings related to the issues on S.B. 400 during 2007:

- In July 2007, the PSC conducted a two-day planning conference, No. PC9, to “address growth in electricity demand and consumption, the generation facilities that are currently being planned to serve those needs, the adequacy of the transmission grid and proposed additions to the grid, and steps Maryland can take to control electricity consumption.”<sup>9</sup> Thirty-eight parties – including regulated utilities, electricity suppliers, Maryland State agencies, local governments, other states’ utility regulators, Maryland’s grid operator, PJM Interconnection, LLC (“PJM”) and financial services companies – submitted written comments (which are available on the PSC’s website) and participated in the conference.
- As directed by the General Assembly in S.B. 400,<sup>10</sup> the PSC also convened a work group session in November 2007 to assist the PSC in its study and analysis of Maryland’s electricity markets.<sup>11</sup> The PSC invited a broad array of stakeholders,<sup>12</sup> who provided helpful comments and insights over the course of the session.

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<sup>8</sup> The team also included SEMCAS Consulting Associates, an Upper Marlboro-based firm specializing in energy conservation and environmental consulting.

<sup>9</sup> Notice of Planning Conference on Maryland’s Energy Future, *In the Matter of the Commission’s Maryland Electricity Planning Conference*, Case No. PC9 (June 8, 2007).

<sup>10</sup> S.B. 400, § 2(a)(2).

<sup>11</sup> See Notice of Workgroup Session, *In the Matter of the Commission’s Maryland Electricity Planning Conference*, Case No. PC9 (November 8, 2007).

<sup>12</sup> See S.B. 400, § 2(a)(2)(ii)(1)-(16).

- The PSC substantially expanded its analysis of demand-side management and energy efficiency programs. This proceeding, Case No. 9111, began in January 2007 as a request by BGE to undertake a pilot demand-response program and evolved first into a collaborative effort among the utilities, PSC Staff and the Office of People’s Counsel to design and implement programs state-wide. After reviewing the initial report of the collaborative, and in light of Governor O’Malley’s EmPower Maryland initiative, the PSC dramatically increased the energy savings targets it will expect the utilities to achieve.<sup>13</sup> The PSC held two days of hearings on the companies’ proposals. The PSC also approved a tariff submitted by BGE to make permanent its original “pilot” demand-response program.
- On its own initiative, the PSC opened an investigation of the Standard Offer Service (“SOS”) procurement process. Although the investigation focused primarily around the question of whether the current SOS auction process should be abandoned or modified in favor of an actively managed portfolio approach (and, if so, how to structure such a portfolio),<sup>14</sup> this proceeding also examined whether pricing benefits could be achieved for low-income residential customers through aggregation, whether the SOS procurement process should include bidding for energy efficiency and conservation programs, and other questions relating to the need for additional transmission and generation resources in Maryland.<sup>15</sup> Thirty different parties submitted more than 2,000 pages of written testimony and brought forty-one witnesses to testify over ten days of live hearings.

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<sup>13</sup> See *In the Matter of the Commission’s Investigation of Advanced Metering Technical Standards, Demand Side Management Cost Effectiveness Tests, Demand Side Management Competitive Neutrality, and Recovery of Costs of Advanced Meters and Demand Side Management Programs*, Order No. 81637, Case No. 9111 (September 28, 2007).

<sup>14</sup> See Order Initiating Proceeding, *In the Matter of the Commission’s Investigation of Investor-Owned Electric Companies’ Standard Offer Service for Residential and Small Commercial Customers in Maryland*, Order No. 81563, Case No. 9117 (August 16, 2007).

<sup>15</sup> See Notice Initiating Phase II Proceeding, Case No. 9117 (September 25, 2007).

The PSC will issue rulings regarding demand-side management programs and the future SOS procurement process by early 2008.

### III. MARYLAND'S MARKET FOR ELECTRICITY

The structure of Maryland's current electricity market derives from the Electric Customer Choice and Competition Act of 1999, which separated utilities' generating assets from their distribution and transmission functions.<sup>16</sup> As a result of this legislation, all Maryland-based power-generating capacity was transferred either by sale or inter-affiliate transfer from a wholly state-regulated entity, the local utility, to an unregulated power company. The net effect of this change was that the electricity previously subject to traditional rate-of-return regulation (in which the PSC set the utility's profit through a state regulatory proceeding) would now be purchased by local utilities in the federally regulated wholesale electricity market. In effect, Maryland's electricity is a commodity produced by "merchant generators," companies that sell power in a number of different markets, such as the spot market (*i.e.*, the current market) or the forward market (*i.e.*, agreements to supply electricity at a future date).

The PSC does not regulate the wholesale electricity markets – they are regulated only at the federal level, by the Federal Energy Regulatory Commission ("FERC"). The wholesale market for Maryland power purchases is operated by PJM Interconnection, LLC ("PJM"), the Regional Transmission Operator ("RTO") that operates the power grid for 13 states and the District of Columbia. The wholesale power market is not regulated in the same manner in which the state market was previously regulated, *i.e.*, according to rate of return principles. Rather, under federal law and the FERC rules that PJM implements, the wholesale market is regulated largely through competitive market forces, limited only by whether the market is structured to deliver rates that FERC considers "just and reasonable." Federal law requires that wholesale rates be just and reasonable, but presumes that rates are just and reasonable rates if sufficient competition exists in a particular market.

The net effect of restructuring was to remove state regulators from the role of determining the bulk of the costs associated with electricity rates:

The upshot of these federal and state innovations in electricity regulations is that state regulators, despite their continued authority over rates charged directly to consumers, have much less actual authority over those rates than they did when [*United Gas Pipe Line Co. v. Mobile Gas Service Corp.*, 350 U.S. 332 (1956)] and [*Federal Power Commission v. Sierra Pacific Power Co.*, 350 U.S. 348 (1956)] were decided. Local utilities now obtain power largely through wholesale contracts subject to FERC's exclusive regulation, rather than

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<sup>16</sup> Md. Ann. Code, Public Utility Companies Art. §§ 7-501 *et seq.*

through self-generated and self-transmitted power. As a result, state regulators ordinarily must set retail rates with the wholesale rates as an established cost factor. . . . FERC has exclusive jurisdiction over the wholesale rates that now drive the electric power market and, as a practical matter, largely determine the rates ultimately charged to the public.<sup>17</sup>

PJM not only manages the markets for wholesale electricity and its related components, but ensures the reliability of the electric system as a whole. To this end, PJM also engages in an extensive planning process, the Regional Transmission Expansion Plan (“RTEP”) in which transmission projects are considered and approved to ensure the region as a whole has adequate transmission capabilities to ensure reliable electric service. Although PJM tracks projects for new generation, it may have some “last resort” ability to procure additional generation (the scope of which is unclear, and it has never been invoked).<sup>18</sup>

It is within this structural framework that we, with the help of our consultants, have analyzed various options for re-regulating the Maryland electricity market.

#### **IV. ANALYSIS AND RECOMMENDATIONS**

##### **A. THE STATE AND FEDERAL ENERGY MARKETS HAVE NOT MET MARYLAND’S ELECTRICITY NEEDS**

Maryland suffers from a State-wide shortfall in net generating capacity. This shortfall leads to two major consequences. The *first* impact is on price. As a general matter, rules of supply and demand dictate that prices will increase when demand exceeds supply, as is the case with Maryland’s in-state generation capability. Our transmission constraints inhibit our ability to import energy to effectively match demand and supply.

The *second* major impact on ratepayers is the prospect of interruptions in service, either in the form of “load shedding,” during which customers could see all or part of their electricity shut off during peak times, or statewide rolling brownouts. When the disparity between supply and demand widens enough, as PJM predicts it will in 2011-2012, prices will continue to increase and may be accompanied by a physical inability to import sufficient electricity to meet Maryland’s needs. The result: PJM will unilaterally curtail existing loads, leaving Maryland consumers to pay even more money for less power.

Proponents of the *status quo* will argue that the deregulated market simply needs more time to adjust. But given the serious reliability and pricing issues

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<sup>17</sup> *Public Utility District No. 1 of Snohomish Co. v. Federal Energy Reg. Comm’n*, 471 F.3d 1053, 1067 (9<sup>th</sup> Cir. 2006).

<sup>18</sup> See Testimony of Michael Kormos, Case No. 9117, Phase II, at 6.

Maryland faces, the threshold issue is whether “waiting for the market to work,” with no guarantee that it will, is an acceptable alternative to some form of re-regulation. Under restructuring, as the General Assembly originally conceived it and as the federal laws creating the wholesale power market contemplated, new generation would be built according to market forces rather than regulatory or legislative fiat. In our view, it would be a mistake to entrust the reliability and price stability of Maryland’s electric supply entirely to these forces. Some intervention is required in the immediate future.

## **1. Maryland Faces A Critical Reliability Shortfall**

The data and testimony the PSC has gathered in the past nine months indicate that to date, Maryland’s electricity needs have not been satisfied or well-served by the “restructured” electricity markets. Maryland specifically (and the Mid-Atlantic region of the PJM footprint as a whole) faces a severe electricity reliability problem in the 2011-2012 timeframe unless two new major transmission lines are in service.

### **a. Major Transmission Projects Are Being Planned By PJM To Maintain Reliability.**

There are major transmission projects being planned that, if built, could relieve the current constraints:

#### **i. The TrAIL Line**

The Trans-Allegheny Interstate Line (“TrAIL”) is a 500-kV transmission line being developed by an affiliate Allegheny Power. As planned, this line would connect Maryland to generation sources in Virginia, West Virginia, and Pennsylvania; CPCN proceedings are pending before the utility commissions in each of these states.<sup>19</sup>

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<sup>19</sup> The Pennsylvania Public Utilities Commission has received many protests against the TrAIL line. Hearings on the TrAIL application are scheduled for January 2008 in West Virginia and for February 2008 in Virginia.



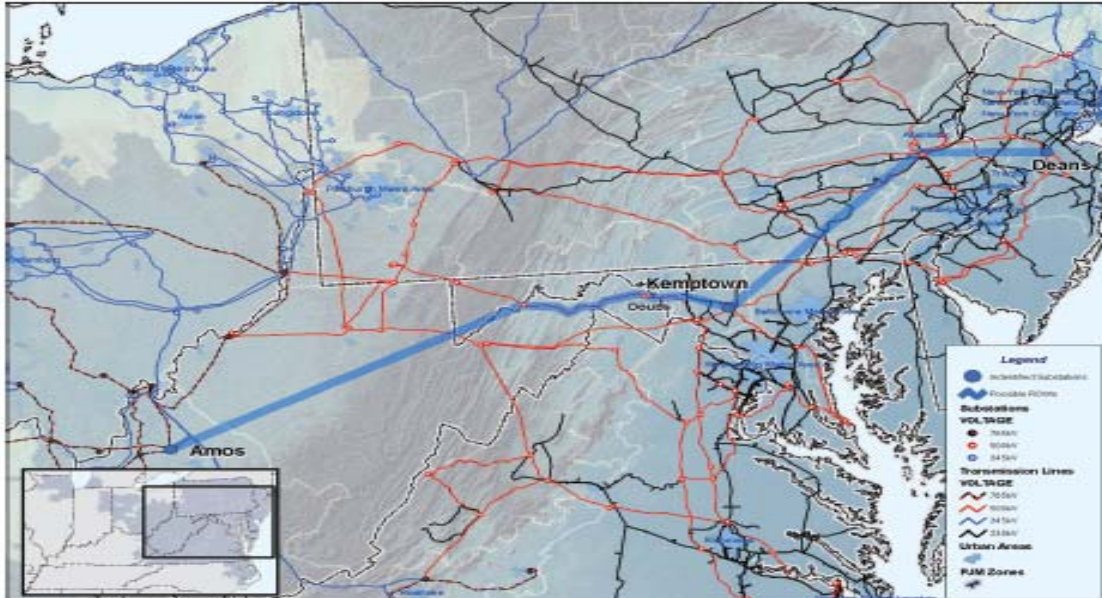
This line will be able to carry as much as 2400MW of power on a single circuit, subject to access and egress circuits and the capacity of the local networks it will serve. According to PJM’s 2006 Regional Transmission Expansion Plan (“RTEP”), this project “is needed to avoid reliability criteria violations in 2011 and maintain power transfers to serve Baltimore, Washington, northern Virginia and other eastern PJM load centers.” The line is expected to begin service in June 2011 and its estimated cost is \$850 million. Under the rate design FERC has adopted, the costs of the TrAIL line will be socialized across the PJM region.<sup>20</sup>

**ii. The PATH Line.**

Even if the TrAIL Line is built, PJM’s reliability studies reveal that the Baltimore-Washington metropolitan area faces additional reliability violations by 2012 unless the Potomac–Appalachian Transmission Highline (“PATH”), a 765 kV line between Maryland and West Virginia, also is built. The PATH line, which is being developed by Allegheny Power and American Electric Power (“AEP”), will extend about 300 miles from the John Amos 765 kV station in West Virginia to a new Kemptown station located southeast of Frederick, Maryland.<sup>21</sup>

<sup>20</sup> See *PJM Interconnection, LLC*, Docket EL05-121, Order 494, 119 FERC ¶ 61,063 (4/19/07). Several parties have filed for rehearing of Order 494, and FERC issued a tolling order to consider the requests for rehearing.

<sup>21</sup> The PATH project encompasses the first half of AEP’s proposal of a 550-mile, \$3 billion 765 kV line. The second part of the line (from the Kemptown Station into New Jersey) still is being studied by PJM.



PATH would traverse both Washington and Frederick Counties in Maryland and will be able to carry as much as 5,000 MW of power on a single circuit, subject to access and egress circuits and the capacity of the local networks it will serve. The PATH Line’s estimated in-service date is June 1, 2012 and its estimated cost is \$1.8 billion, which also will be socialized across the PJM region.<sup>22</sup> Although this line was approved by the PJM Board on June 22, 2007, AEP has not yet filed for new rates to recover the costs of the PATH project (plus incentives) or AEP has not yet filed CPCN applications with either the Maryland or West Virginia State Commissions.<sup>23</sup>

**b. Maryland Falls Within A Newly Designated “National Interest Electric Transmission Corridor”**

On October 5, 2007, the United States Department of Energy (“DOE”) designated the entire State of Maryland as part of a National Interest Electric Transmission Corridor (“NIETC”). DOE made this designation under the Energy Policy Act of 2005 (“EPAct 2005”),<sup>24</sup> which authorizes DOE to “designate any geographic area experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers . . . .”<sup>25</sup> By including Maryland within an NIETC, DOE has the authority, under certain circumstances,<sup>26</sup> to make siting and

<sup>22</sup> FERC conditionally approved certain incentives for this line. See *American Electric Power Service Corp.*, Docket EL06-50-000, July 20, 2006 (*rehearing denied 1/22/07*).

<sup>23</sup> A third project, the “MAAP Line,” was approved by the PJM Board on October 17, 2007. The MAAP Line is proposed by PHI Holdings, Inc (“PHI”) and would be a 500 kV line running from Virginia through the Delmarva Peninsula to New Jersey. The cost of MAAP Line, approximately \$1.05 billion, is also expected to be socialized across the PJM region.

<sup>24</sup> See H.R. Rep. No. 109-215, pt 1, at 262 (2005).

<sup>25</sup> *Id.* at ¶ 216(a)(2).

<sup>26</sup> Most notably, the EPAct allows DOE to seek, and the Federal Energy Regulatory Commission (“FERC”) to issue, “backstop” construction permits when “a State commission or other entity that has authority to approve the siting of the facilities has (i) withheld approval for more than 1 year after the

eminent domain decisions<sup>27</sup> that normally would fall to the PSC or other states commissions.<sup>28</sup> Although some state and local authorities have asked DOE to reconsider aspects of this designation,<sup>29</sup> the NIETC process should expedite the construction of critical transmission lines in places like Maryland that face potentially crippling transmission constraints.

**c. Unless The TrAIL and PATH Lines Are Built, Maryland Faces A Substantial Capacity Shortfall**

Michael Kormos, PJM's Senior Vice President of Reliability Services testified this fall that unless the TrAIL line is in service by 2012, the region's electricity load could exceed the transfer capability of the existing transmission system by 2,000 MW. The problem is compounded if the PATH line is not in service by 2012, which could cause the net load to exceed the import capability by 3,000 MW. If neither line is in place on time, the regional shortfall could be as much as 6,500 MW.<sup>30</sup> These shortfalls are the equivalent of over ten 600 MW power plants, approximately 23% of which (or approximately 1,500 MW) would fall on Maryland alone. But this transmission shortfall is not simply a Maryland problem, it is a regional one: if Maryland, either through re-regulation efforts or market forces, increased its in-state generation to address our 1,500MW shortfall, it would remain vulnerable to load-shedding in 2012 if other states in the region failed to take action as well.

Mr. Kormos has not minced words in describing the real-world impact if these lines are not built: he testified recently that "there is the potential for reliability problems across this region if both of the lines are not built by their required in-service dates," and, indeed, that both lines "are critical to preserve reliability in the State of Maryland as well as the surrounding region."<sup>31</sup> His testimony during the PSC's Planning Conference on Maryland's Energy Future was even stronger: if the TrAIL

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filing of an application seeking approval pursuant to applicable law or 1 year after the designation of the relevant national electric transmission corridor, whichever is later; or (ii) conditioned its approval in such a manner that the proposed construction or modification will not significantly reduce transmission congestion in interstate commerce or is not economically feasible[.]”

<sup>27</sup> The EAct 2005 extends to DOE “limited federal backstop siting authority (eminent domain) for electric transmission lines in areas designated by the Secretary of Energy as national interest transmission corridors” and the authority to pay “just compensation for any rights-of-way acquired by eminent domain.” See S.R. Rep. No. 109-78, at 48 (2005).

<sup>28</sup> Under Maryland law, the Commission has jurisdiction to grant (or deny) certificates of convenience and necessity (“CPCNs”) for the construction of overhead transmission lines over 69,000 volts. A CPCN is required before an electric company may “exercise a right of condemnation” in connection with such construction. See generally Maryland Code Ann., Public Utility Companies Art. § 7-207.

<sup>29</sup> Through the Department of Natural Resource’s Power Plant Research Program, the State of Maryland sought rehearing of DOE’s designation of the Mid-Atlantic Area on the ground that the designation usurped authority properly exercised by States. The Pennsylvania Public Utilities Commission (“PAPUC”), which also has sought an injunction restraining FERC from implementing the NIETC designation for the Mid-Atlantic corridor. Other parties have introduced bills in Congress seeking to limit or block the NIETC designation, to ensure that states and local authorities have final say over the siting of transmission, and to deny federal eminent domain to FERC permit holders.

<sup>30</sup> Testimony of Michael J. Kormos, Case No. 9117, Phase II, at 3-4.

<sup>31</sup> *Id.* at 3.



Line is not in service by 2012, the “magnitude of the overloads is downright scary,” that “[t]his is not simply just a hot summer day problem,” and that the grid could find itself overloaded on “any day it’s a little hot.”<sup>32</sup> A witness for PEPCO & Delmarva Power and Light, William Gausman, agreed, calling the completion of both the TrAIL and PATH lines “critical to maintaining the long term reliability and reducing persistent congestion in the Mid-Atlantic Region.”<sup>33</sup>

It is no foregone conclusion that the TrAIL and PATH lines will be built, however. No transmission project of their magnitude has been attempted in over a decade, even longer in this part of the country, and the political opposition to these lines is organized and dedicated.<sup>34</sup> The ongoing failure of the market to add meaningful new transmission or capacity in the State and region manifests itself in another significant way: high wholesale (and thus retail) electricity prices for Maryland ratepayers.

## **2. Maryland’s Shortfalls In Transmission And Generation Inflate Electricity Prices**

When Maryland electric companies purchase power in the wholesale market, the price includes a number of separate components. Of these, three are the most significant: (a) the energy itself, which comprises the largest share of the cost; (b) congestion charges and (c) capacity charges.<sup>35</sup> These latter two elements are determined by the operation of the wholesale electricity markets, and particularly Maryland’s location within the energy grid. Stated generally, congestion costs are driven higher by transmission shortfalls and capacity charges are driven higher by capacity shortages, which are themselves a function of available generation and transmission.

The chart below, prepared by the PSC’s SOS auction consultant, Vantage Consulting (“Vantage”), demonstrates that congestion and capacity charges (and especially capacity) represent an increasing portion of the (increasing) cost of wholesale power for SOS customers:<sup>36</sup>

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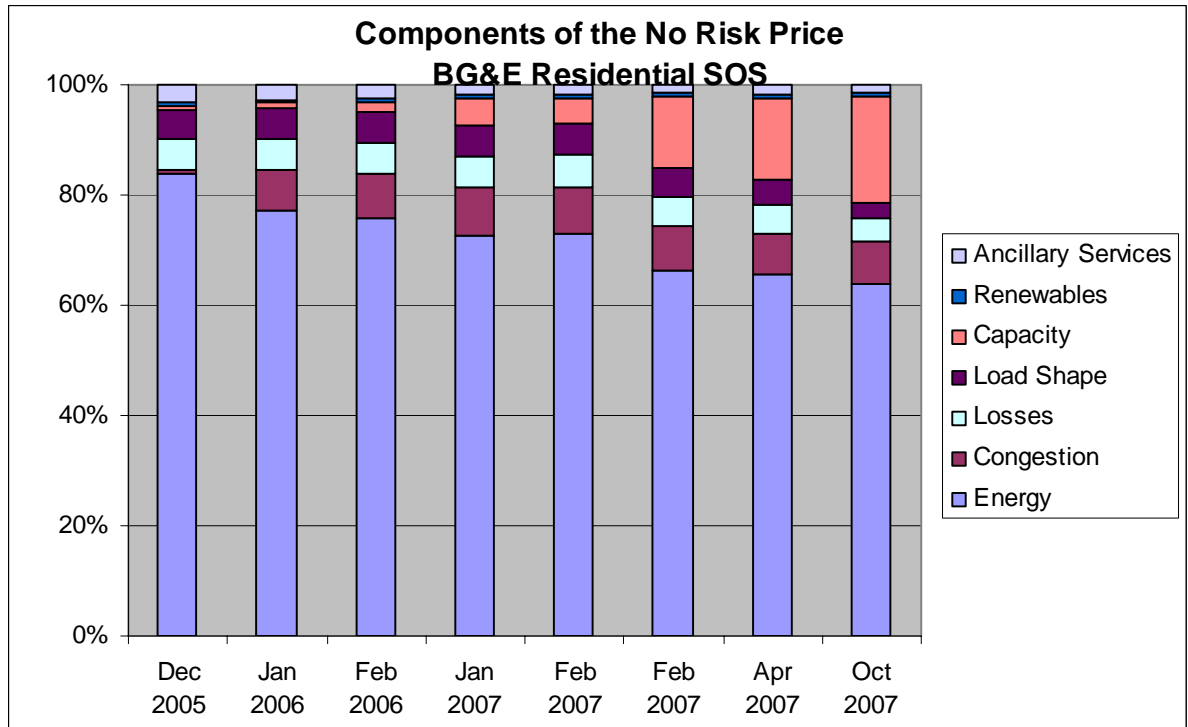
<sup>32</sup> Testimony of Michael J. Kormos, PC9, July 27, 2007, Transcript at 68, 70.

<sup>33</sup> Testimony of William Gausman, Case No. 9117, at 2.

<sup>34</sup> See Testimony of Jerry Hughes, PSC Staff, Case No. 9117, Phase II, at 6.

<sup>35</sup> The rest of the components – ancillary services, renewables, load shape and losses – are relatively minor and stable.

<sup>36</sup> The dates indicated in this chart are the dates of the SOS auctions, not the dates the power was or would be delivered. The price allocations represent the portion of the overall “no risk” price at each auction assigned to each component.



**a. Locational Marginal Pricing**

Energy prices vary across the PJM footprint according to a number of factors that differentiate energy prices at different points within the system.<sup>37</sup> PJM, as the grid operator dispatches electricity in “merit order,” *i.e.*, starting with the lowest cost generation and dispatching higher-cost generation until the electric load is satisfied. But because the highest cost or “marginal” generating unit set the clearing price for all units operating in the zone, customers pay higher prices when higher cost power must be dispatched to meet load requirements. The resulting price is called the “locational marginal price” or “LMP” for that zone.

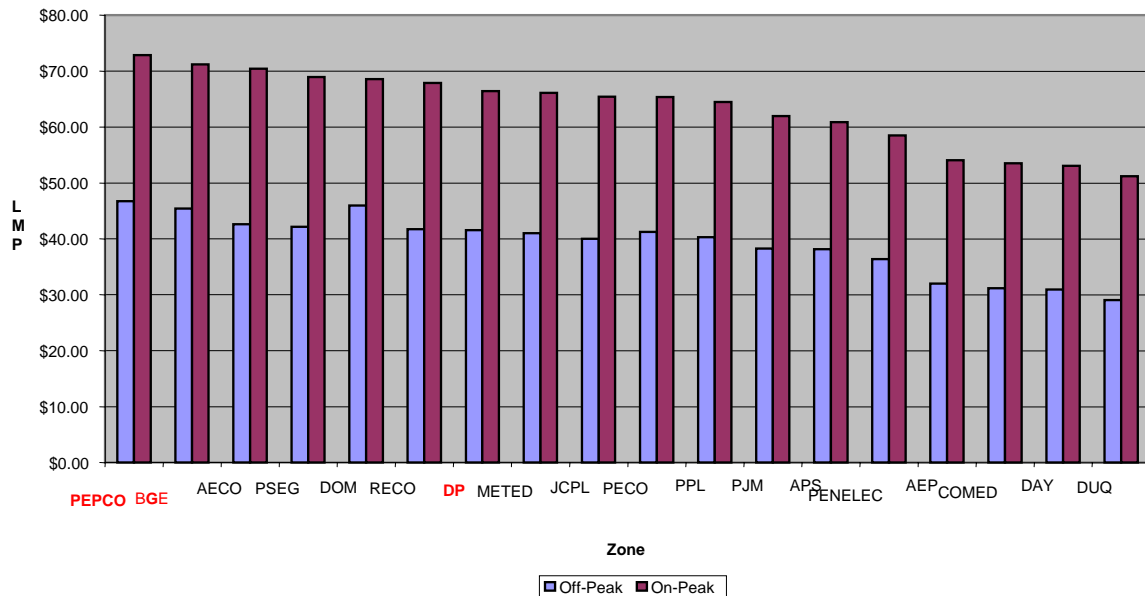
LMPs are highest in areas of shortage or constraint. One factor that influences LMPs significantly is the extent, or lack, of transmission capability into a state or region. When transmission lines are “congested” or “constrained,” *i.e.*, they cannot carry the lower cost electricity to meet demand, PJM must dispatch more expensive generation located in the constrained zone, which increases LMPs.

Maryland falls within the SWMAAC region, which includes the service territories of BGE and Pepco, and has a shortage of transmission capacity. This congestion, combined with Maryland’s status as a net importer of electricity, requires PJM to direct less economical power plants to run in order to meet Maryland’s needs. The marginal cost of power generated by those plants is considerably higher – but under the LMP model, *the high marginal cost of power from those plants sets the price*

<sup>37</sup> See generally Levitan Report at 43-56.

for the entire region. This out-of-merit-order dispatch creates what are referred to as congestion costs. Vantage estimates that congestion costs will add approximately \$168 million to the costs of electricity for Maryland SOS customers in 2008. And in response to questions from the PSC, the PJM Market Monitor calculated the total gross (not net of any offsets) congestion cost in Maryland at approximately \$1.2 billion in 2006. Net of offsets, the cost of congestion to Maryland ratepayers in 2006 was likely in the \$500 million range.

As part of another analysis on which we will report separately, Levitan is currently estimating the costs of the LMPs for energy in Maryland. There is no dispute, however, that LMPs in the SWMAAC region, and therefore in Maryland, are among the highest in the PJM region, as a chart from Vantage (which highlights the charges paid by BGE, Pepco and Delmarva Power and Light) confirms.<sup>38</sup>



These prices support our view that the LMP model has not worked in Maryland as its creators intended. The theory behind locational marginal pricing was to ensure that accurate price signals were sent to the market, and that “the effect of transmission capacity constraints and congestion could be explicitly included in setting the energy price each day.”<sup>39</sup> By making the full cost of transmission constraints more transparent in market prices, participants in the wholesale markets, such as merchant generators, can determine where additional capacity is needed. Since LMPs are highest in areas that are most constrained, those high prices should, in theory, provide the economic incentives for new generators to build in constrained areas.

This has not happened. LMPs have provided higher prices and higher revenues for existing generators, but those market forces have not yielded adequate new

<sup>38</sup> See also Levitan Report at 43-44.

<sup>39</sup> Kaye Scholer Report at 7.

generation inside Maryland's transmission constraints. PJM's Market Monitor noted, in his 2006 State of the Market Report, that net revenues earned by generators were still inadequate to cover the costs of building new generation, despite the high LMPs. The result: Marylanders have paid and will continue to pay higher prices than others in the PJM region due to our higher LMPs, but no new material generation has been built in recent years, nor is significant new generation planned to come on line here anytime soon.

To generators operating in these markets, this means that the price signals sent by LMPs are not strong enough. And, in fact, FERC and PJM determined that additional price signals – generated by the relatively new Reliability Pricing Model (“RPM”) described below – were needed to incent new generation. As such, Maryland ratepayers are now contributing huge payments under RPM *and* paying high LMPs, with no meaningful relief from capacity shortfalls or high prices in sight. To us, this means that the market, as currently structured, has not incented the construction needed to maintain reliable service in Maryland at reasonable prices.

#### **b. Reliability Pricing Model**

As described in detail in the Levitan Report,<sup>40</sup> RPM was designed to provide generators with longer-term price signals for capacity resources. These price signals are established through auctions for capacity in future planning years. Generators bid capacity for a particular “power year” (the January 2008 auction will involve bids for capacity in the June 1, 2010-May 31, 2011 timeframe), and those auctions establish that year's clearing price for capacity. PJM then makes payments to generators bidding capacity by PJM and the load-serving entities pay for the capacity, net of certain offsets and credits.

Although the theory underlying RPM is that it will create incentives for new generation in constrained regions like Maryland's, RPM's benefits (*i.e.*, capacity payments) are not reserved for new market entrants. Once a clearing price is established for capacity for the year in question, *all generators can receive the capacity revenues, including existing generators*. In other words, while RPM is intended to provide locational and future price signals to incent new capacity when and where it is needed, this revenue is available to all generators in the region, not just new generators. Unfortunately, this means that the *status quo* is lucrative for generators who already have plants in constrained areas, leaving them little incentive to build here – which leaves Maryland ratepayers only to hope that the price signals reach potential generators and overcome the financial and logistical barriers to entering this market that have kept them out so far.

To date, that hope appears to be in vain. RPM has resulted in significantly higher clearing prices in Maryland, but no significant new generation. According to PJM's data, set forth in the Levitan report, the clearing price for capacity in

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<sup>40</sup> Levitan Report at 45-51.

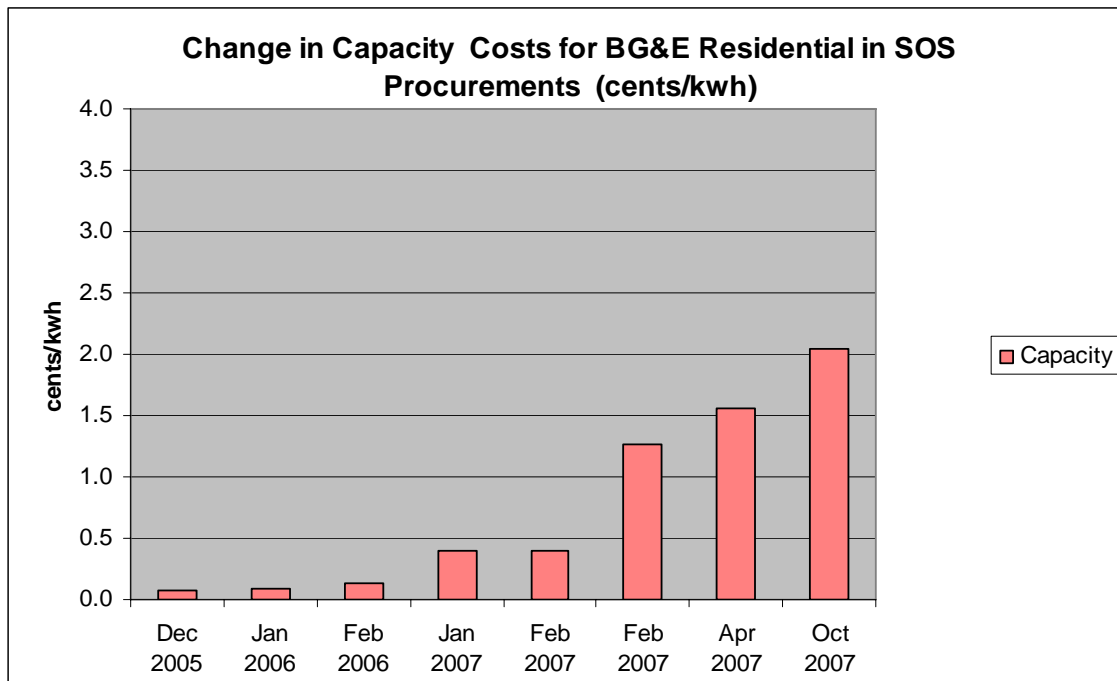
SWMAAC in 2009/2010 was \$237/MWday, more than double the price in the PJM footprint as a whole (\$102/MWday).<sup>41</sup>

**RPM Base Residual Auction Results (\$/MW-Day)**

	EMAAC (Delmarva)		SWMAAC (BGE and PEPCO)		RTO (APS 07/08 & 08/09)		MAAC + APS (APS 09/10)	
	Generator Price	Load Payments	Generator Price	Load Payments	Generator Price	Load Payments	Generator Price	Load Payments
07/08	\$197.67	\$177.51	\$188.54	\$140.16	\$40.80	\$40.80		
08/09	\$148.80	\$143.51	\$210.11	\$180.58	\$111.92	\$111.92		
09/10			\$237.33	\$218.12	\$102.04	\$102.04	\$191.32	\$188.55

Levitan is completing a more detailed analysis of the impact of RPM on Maryland ratepayers, but we estimate that in 2008, RPM costs added \$400 to \$500 million to SOS residential rates, with the ultimate cost to all ratepayers much higher when commercial and industrial accounts are added in.

RPM, and the resulting increase in capacity costs, is responsible for an ever-growing portion of the increases in Maryland residential SOS rates between 2005 and the present. The percentage of the full requirements price attributed to capacity payments has increased from a barely perceptible portion of the total cost to more than 2 cents of the 10-11 cents/kwh Maryland consumers pay:



<sup>41</sup> *Id.* at 50.

The Levitan Report describes in detail how RPM operates and the impact of changes in demand and supply on RPM auction prices.<sup>42</sup> As one might expect, RPM prices will decrease, all other things being equal, if new capacity resources are added faster than demand increases. Conversely, if new capacity is added more slowly than demand rises, or if plant retirements outstrip the combination of new generation and demand reduction, the capacity prices will continue to rise. And in any event, Maryland consumers will continue to pay high capacity charges until the *status quo* changes:

The result of these RPM auctions indicate that the customers in Maryland will be paying higher capacity costs until (i) at least one major transmission line is completed (ii) significant in-state generation capacity is constructed or (iii) enough demand response is developed to reduce demand significantly.<sup>43</sup>

The question, then, is whether Maryland can wait for the market to deliver the new capacity or transmission resources it needs. We believe that the answer is an unequivocal “no.”

### **3. Is RPM Working?**

RPM is relatively new, but the auctions to date permit some preliminary conclusions.

*First*, as Levitan’s chart (above) demonstrates, the portions of the State of Maryland encompassing the BGE and Pepco service territory pay significantly higher capacity charges than the rest of PJM pays.<sup>44</sup>

*Second*, it is difficult to know what signals these prices are sending. It is true that across the entire PJM footprint, some new generation and additional demand response resources have been bid into the RPM auctions. As a result, PJM believes that “[t]hrough RPM, [PJM has] retained generation that would have retired or been mothballed or been exported to other regions, plus [PJM has] attracted significant firm demand response commitments.”<sup>45</sup> Statements by merchant generators suggest that capacity prices are causing them to consider new generation, or to reverse decisions to retire existing plants that in the absence of capacity payment were not economical. However, a closer examination of the impact of RPM in the SWMAAC portion of the PJM region, and of specific assertions made by generators, indicate that the success of RPM is an open question. Because RPM is paid to both new and existing generators, it can affect future capacity not only by encouraging new generation, but by creating

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<sup>42</sup> *Id.* at 45-51.

<sup>43</sup> *Id.* at 51.

<sup>44</sup> *Id.* at 50.

<sup>45</sup> PJM Press Release, “PJM Reliability Pricing Model Attracts More Generation, Demand Response,” October 16, 2007.

incentives to invest in existing generation in order to extend the operating life of the plant. One challenge in measuring the impact of RPM lies in determining its specific impact on decisions relating to withdrawing plants from planned retirements.

An example illustrates the point. Constellation Energy Group (“CEG”) announced that RPM payments have caused the company to establish 900 MW of capacity in the region that would otherwise not be available in the future. But none of this is really new: 178 MW consists of “rejuvenate[d] . . . retired generation assets in Maryland” and the rest is “further investments to extend the lives and improve the reliability and operational flexibility of about 700 MWs of older Maryland plants that might otherwise have been retired.”<sup>46</sup> Although such actions can have the effect of creating “new” capacity at the point in time when the slated retirements are reversed, the impact may be illusory where, as in these cases, CEG had not filed for deactivation with PJM. And because these plants had not been listed for deactivation with PJM, and CEG had not notified the PSC previously that it planned to retire the plants in question, it is not possible to know with certainty (1) when or whether such deactivations were being contemplated; or (2) the extent to which capacity payments played a role if, in fact, a decision was made to extend the life of the plants.

Some witnesses testifying before the PSC have contended that the PJM interconnection queue, a list of potential and proposed generation, foreshadows an increase in generation for the PJM region. But other testimony indicates that only approximately 25% of projects on the interconnection queue are ever actually constructed, and PJM itself does not expect all projects listed in the queue to be built.<sup>47</sup>

A more general challenge in answering the question of whether RPM is working lies in determining what constitutes successful implementation. One commentator who analyzed the recent RPM auctions has questioned whether the auctions truly have increased capacity across the region by 9,000MW in the 2009/2010 planning year, as PJM claims.<sup>48</sup> According to Mr. Wilson, the data for the auctions for the 2007-2009 delivery years demonstrate that the growth in capacity offered into the auctions did not keep pace with the expected growth in demand. Mr. Wilson opines that only 62.8% of the capacity needed to meet the increase in PJM’s reliability requirements was offered. He also fears that although PJM as whole may continue to satisfy the reliability standards, regions within PJM such as SWMAAC still face major reliability challenges. PSC staff share this concern:

The 2007/2008 auction had a net decrease of 93MW and the 2009/2010 had a net decrease of 122.7 MW. Consequently, the net total change for installed incremental SWMAAC capacity for the three years was

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<sup>46</sup> See Constellation Energy Q32007 Earnings Presentation, October 31, 2007, Comments of Mayo Shattuck, Slide 8.

<sup>47</sup> See Testimony of Michael Kormos, Case No. 9117, Phase II, at 8.

<sup>48</sup> See James F. Wilson, “PJM’s Reliability Pricing Model (RPM): How Is It Doing,” October 2007 (based on a forthcoming report on RPM for the American Public Power Association)).

an increase of only 106.8MW (less than 1%). Demand response showed some promise with an incremental increase of 344.9MW, but the SWMAAC lost a net total of 238.1MW of generation capacity during those years.<sup>49</sup>

The witness for the Maryland Office of People's Counsel in the same case, Jonathan Wallach, agreed that the amount of capacity for the SWMAAC region has fallen short of the minimum reliability threshold for the region in each of the three auctions that have been held.<sup>50</sup>

Kaye Scholer also noted in its Report that in the region encompassing the BGE and Pepco territory, the capacity auction for the planning year 2009/2010 saw a net decrease in the amount of available capacity and an increase in price:

Rather than the declining capacity prices that had been predicted and that had been experienced in other part of PJM, *Maryland's capacity prices have increased with no assurances that those prices will do anything to stimulate new generation or demand response.*<sup>51</sup>

#### **4. Should Maryland Wait For Market Solutions To Address Capacity Shortfalls?**

In our hearings, the PSC has been urged by current market participants to “wait for the market to work” before pursuing options that might involve state mandated development of new generation. These arguments rely on the theory that the market will respond eventually so long as “price signals,” *i.e.*, RPM payments, are high enough for an extended length of time to make investment in new plant profitable. They correctly point out that RPM is still transitioning in – the first capacity auction for the full three-year forward period under the RPM will be held in January 2008 for delivery in 2010-11 – and that these annual auctions should begin to provide the opportunity for new entrant power plants to enter the capacity market and for others to bid in the delayed or avoided retirements of existing units and demand response. Proponents also argue that retreating back to a rate-regulated paradigm shifts the risks associated with new construction back to ratepayers from shareholders. Proponents point to what they view as encouraging data from the RPM auctions to suggest that RPM is having its intended consequences:

RPM appears to be starting to do what it was designed to do – promote reliability in the PJM region...the Commission needs to allow RPM the time to do the job

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<sup>49</sup> Testimony of Calvin Timmerman, Case No. 9117, Phase II, at 10 (emphasis added). A portion of the reduced generation is related to the “parasitic load” associated with environmental upgrades to certain plants required by Maryland’s Healthy Air Act.

<sup>50</sup> Testimony of Jonathan Wallach, Case No. 9117, Phase II, at 8-9.

<sup>51</sup> Kaye Scholer Report at 23.



it was intended to do before having ratepayers assume the potential burden of utility built generation or long term contracts.<sup>52</sup>

Other witnesses have argued that not only is it premature for Maryland to intervene, but also that doing so will have negative impact on ratepayers and the market as a whole. In particular, they point to the chilling effect state intervention in the market will have on the willingness of merchant generators to invest in the area:

A major policy reason for not allowing IOUs to enter into long term contracts, or rate based generation, is the adverse effect that such contracts or regulatory compacts, have on competitive (i.e. merchant) wholesale suppliers. Utility build or contracted generation has cost recovery guarantees that merchant generators do not have. As a result, a chilling effect on new investment will occur and merchant generators will likely delay or forgo new construction and simply wait until the next utility build or buy decision. This is a path backward and will retard progressive development of competitive wholesale markets.<sup>53</sup>

[I]f RPM is allowed to operate without interference from out-of-market interventions, I believe it can send the necessary long-term price signals to incentivize new generating facilities.....the best way to ensure that RPM would not be successful, however, would be to create the perception that the regulator will subsidize new generation for the purpose of suppressing price signals to the rest of the market. This will cause prospective developers to seek higher returns for any new generation...or they may not build at all.<sup>54</sup>

Maryland's investor-owned utilities have echoed this same sentiment.<sup>55</sup>

Still, RPM has not yet demonstrated an ability to incent adequate capacity to meet reliability standards, and certainly has not attracted sufficient generation to lower

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<sup>52</sup> Testimony of Glen Thomas, Case No 9117, Phase II, at 4-5. Mr. Thomas is a former Commissioner of the Pennsylvania Public Utilities Commission and current representative of power producers in the PJM region.

<sup>53</sup> Testimony of Lance Muckleroy, Case No. 9117, Phase II, at 9-10. Mr. Muckleroy testified on behalf of the Retail Energy Supply Association.

<sup>54</sup> Testimony of Gary Sorenson, Case No. 9117, Phase II, at 3. Mr. Sorenson testified on behalf of PSEG Energy Resource and Trade LLC.

<sup>55</sup> See Testimony of Robert Reeping, Case No. 9117 Phase II, at 4 ("ratepayer subsidized investment could be seen as anti-competitive by the wholesale market and thus could have a chilling effect on private investment." Mr. Reeping testified on behalf of Allegheny Power.

capacity prices, and even those who think RPM is working acknowledge that capacity will tighten before it improves.<sup>56</sup> We cannot help but notice, however, that while ratepayers wait for RPM to work, current and future SOS prices include payments to generators, and the price to Maryland ratepayers for “waiting” is high. If, for example, the \$500 million in RPM payments currently imposed on SOS ratepayers for 2008 were directed and dedicated to the construction of new generation infrastructure in Maryland (or the SWMAAC), Maryland ratepayers could look forward to the reliability and pricing benefits from hundreds of megawatts of new generation capability. Instead, these revenues flow to existing generators without any corresponding requirement that these revenue streams from Maryland ratepayers are utilized in any way that benefits Maryland ratepayers. Funding new solutions will impose additional costs on ratepayers who, to some extent, could end up paying twice – once under RPM and then again to fund Maryland-based solutions to the problems RPM is not solving.

It may well be that the markets will provide the new generation Maryland needs over time. There are reasonable arguments that RPM has not yet been tested, since there has not yet been a three-year forward auction. That said, Maryland faces a capacity shortfall in the near term that must be addressed, and we cannot afford to wait for market forces we cannot control. It appears, therefore, that some form of intervention will be required in the short term, before the success (or lack thereof) of RPM is established.

## **5. The Choice For “Re-regulation”**

### **a. Other States Have Opted For Some Form Of “Re-regulation”**

Although RPM is the subject of ongoing inquiry by the PSC, at this point it is clear that capacity prices continue to rise and contribute approximately 20% of the costs of SOS service for residential ratepayers. As noted above, ratepayers will pay hundreds of millions of dollars each year in additional costs under the federal pricing mechanism, but will receive no assurance that the money they pay will be used to address high prices, congested transmission lines and the potential for black-outs in the next 4-5 years.

In our view, it is not in the public interest to rely exclusively on market forces to deliver timely and cost-effective solutions to the serious, structural limitations in Maryland’s electricity markets at this time. Maryland de-regulated in 1999 and implementation began more fully in 2000. After almost seven full years, Maryland

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<sup>56</sup> See Constellation Energy Q32007 Earnings Presentation, October 31, 2007, Comments of Mayo Shattuck, Slide 7 (“These [RPM auction] results are encouraging investment in capacity, transmission and demand response initiatives, which will help meet the reliability needs of customers in the Baltimore/Washington area. However, due to long lead times for these investments to make a meaningful contribution, capacity margins are likely to continue to tighten before we begin to see sufficient development of new generation.”).

ratepayers face among the highest capacity and locational marginal prices in all of PJM, and the prospect of draconian brown-outs in the next five years. *By these measures, Maryland is not better off than it was before deregulation.*

This experience is not unique to Maryland. As part of this analysis, the PSC asked Kaye Scholer to review the circumstances of comparable states – states that de-regulated, experienced difficulties, and then considered and implemented responses that, in some fashion, “re-regulated” the de-regulated markets. Kaye Scholer’s analysis illustrates the compelling similarity between Maryland’s current situation and the circumstances in these other states and provides instructive examples of interventions that did and did not work.<sup>57</sup>

Connecticut provides a helpful example. In that state, growing demand coupled with a lack of new generation meant that by 2009, the state faced a capacity deficit of over 600MW and needed additional generating resources by no later than 2010. Southwest Connecticut, like large portions of Maryland, sat in a transmission-constrained area and suffered from high prices. The existing generation in that portion of the state is older and inefficient, and operates pursuant to FERC-approved “reliability must-run” (“RMR”) contracts that keep such units operating in order to maintain a reliable grid (but also set higher marginal prices). To the extent new generation was built, it utilized natural gas, which, based on marginal pricing there, also increased costs. In short, as in Maryland, the federal market pricing mechanisms resulted in higher costs for ratepayers, while Connecticut ratepayers faced transmission constraints and inadequate in-state generation and saw no relief on the horizon.

Similarly, in Delaware, little new generation was built after that state de-regulated. Growing demand creates higher prices, and like Maryland, Delaware faces transmission congestion. Delaware also has an older and less efficient in-state fleet of generators, which increases the LMPs ultimately passed onto ratepayers.

The Kaye Scholer Report describes how these states and others sought to respond to these challenges where the market had not. Different approaches have, of course, met with varying levels of success. But none of these states opted to rely exclusively on market forces to address their market shortcomings. Like them, Maryland cannot afford simply to wait and see.

**b. The Current Market Does Not Operate Efficiently And Has Significant Barriers To Entry.**

Any market-based supply and pricing paradigm is based on proper economic incentives and well functioning markets. We believe that certain elements of the current design of the wholesale electricity markets, including RPM, create competing

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<sup>57</sup> See Kaye Scholer Report at 24-63 (analyzing re-regulation efforts in Connecticut, Delaware, Illinois, New Jersey, Michigan and New Hampshire).

or inconsistent economic incentives for companies that might build new generation in Maryland.

*First*, RPM payments to existing generators create economic incentives for them to maintain a capacity-constrained market rather than to build new generation. As the Levitan Report illustrates graphically,<sup>58</sup> the clearing price of capacity falls when net new capacity is introduced into a constrained region such as SWMAAC. As a consequence, existing generators in a constrained region would reduce their revenue from existing power plants, in effect cutting their own economic throats, if they added new capacity.

*Second*, the current wholesale market for electricity in Maryland is inefficient. As a general proposition, efficient markets allow competition to enter readily when prices and profits rise. When barriers discourage or inhibit competition, the market is not functioning properly. The result is higher prices for buyers, excessive profits for incumbent market participants, and a continued shortage of supply.

Indeed, new generators face potentially significant barriers to entry, barriers the various pricing signals have not overcome:

- Uncertainty over the anticipated scope and expense of federal or regional regulation of greenhouse gas emissions from power plants can discourage capital investment or raise the cost of capital;
- The siting of new transmission or generation can be controversial and time-consuming; and
- The cost and availability of construction materials can be uncertain and volatile. According to Brian Chin, Vice President for Equity Research in the energy sector at Citigroup, construction costs of raw materials are rising due to global demand, including components of renewable sources such as wind.<sup>59</sup> Constellation Energy Group advised its investors in a recent conference call that the cost of new construction was rising more quickly than new capacity prices,<sup>60</sup> meaning that the currently

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<sup>58</sup> See Levitan Report at 139-59.

<sup>59</sup> Deregulated Generation Funding Comments, Brian Chin, Citigroup Global Markets, Inc., Case No. PC9, Slide 3.

<sup>60</sup> See Constellation Energy Q32007 Earnings Presentation, October 31, 2007, Slide 8 (“Over the past several years, rising construction and materials costs have increased the energy and capacity prices required for generators to achieve a sufficient return.”).

constrained capacity market would continue into the future.<sup>61</sup>

*Third*, the demand for electricity is generally inelastic, which means that prices for electricity can rise with little risk that suppliers will see a reduction in revenue as buyers opt not to buy. Thus, there is little incentive for suppliers to seek moderation in their prices – in a supply-constrained market, they (and their less efficient plants) are price setters, not price takers.

*Finally*, the PJM wholesale market is characterized by various rules and exceptions to rules, and other components that were established to address market dysfunctions and inequities. RPM, for example, is a market construct designed to solve the failure of the market to address shortfalls in capacity that LMPs, also a market construct, were (also) designed to prevent. PJM also monitors and recalibrates the “free market” in other ways – for example, by imposing price mitigation rules to prevent certain generators from exerting market power, except when a particular plant is exempt from mitigation and is allowed by PJM and FERC to exercise market power after all. The intersection of the “free market” and these mitigation rules matters – the exercise of market power by plants exempt from price mitigation rules inflated wholesale prices in Maryland by \$87.5 million in 2006 alone (a fact the PJM Market Monitor uncovered only in response to a special set of questions from the PSC). We are preparing a complaint with FERC to address (and, we hope, eliminate) these “market capping” exemptions.

All of these instances illustrate that the existing electricity market needs extensive tuning, supervision, and modification – in other words, is not exactly a freely functioning and efficiently operating market. Rather, the “free market” on which some advocates argue Maryland should rely features significant barriers to entry, inelastic demand and skewed market incentives that favor incumbent participants, and that market still requires monitoring and external control by a private grid operator.

### **c. PJM Backstop Authority**

Some suggest that the PSC should rely on PJM to address capacity shortfalls. Under PJM’s Tariff with FERC, PJM may have some ability to procure generation in a local area if insufficient capacity clears over a series of RPM auctions.<sup>62</sup> Of course, this is not a market solution – this approach simply places a regulatory solution to a market failure into the hands of a non-public grid operator rather than a public regulator. As such, we do not view this as any more a market solution than the options currently available to the PSC.

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<sup>61</sup> See *id.*, Slide 7 (“However, due to long lead times for these investments to make a meaningful contribution, capacity margins are likely to tighten before we begin to see sufficient development of new generation.”).

<sup>62</sup> See Testimony of Michael Kormos, Case No. 9117, Phase II, at 6.

PJM itself views this ability (the contours of which are uncertain, and it has never been invoked) as “more in the nature of a ‘last resort’ than an integral tool in the planning process.”<sup>63</sup> Regardless, we believe that continued deference to entities, whether for-profit merchant generators or an RTO such as PJM, is not in the public interest. Many of the problems noted in this Interim Report have regional implications and impacts, and a body with regional authority such as PJM may be better suited to address problems on that scale (and, where appropriate, to allocate costs regionally). For that same reason, though, we do not believe that PJM is best suited to consider and implement the interventions that are in the public interest of Maryland and its citizens.

## **B. ANALYSIS OF OPTIONS FOR RE-REGULATION IN MARYLAND**

### **1. Sources of Analytical Information**

Three categories of sources inform the PSC’s analysis of options for re-regulation.

*First*, during the past several months, the PSC has conducted hearings on a variety of issues, including, among other things, the costs and benefits of requiring utilities in the state to enter long-term contracts for generation and the costs and impacts of energy conservation and demand management programs.

*Second*, the Kaye Scholer Report analyzes in detail attempts by other states to “re-regulate” under similar circumstances and options Maryland should, in the firm’s view, consider implementing.

*Third*, the Levitan Report provides extensive modeling and economic analysis to assist in highlighting the costs and benefits of different options for new generation and capacity.

These three sets of sources allow us to offer the General Assembly a comprehensive interim “discussion of costs and benefits to residential and small commercial customers of returning to a regulated electric supply market” and our recommendations regarding the best course for Maryland in the years to come. There is a great deal more we and our consultants can and will study in the year to come, but the information we have gathered so far provides ample basis for the conclusions and recommendations that follow.

### **2. Goal and Purposes in Considering Re-regulation Options**

Ultimately, any effort to re-regulate the Maryland electricity market has two primary objectives: *first*, to ensure that the supply of electricity and the delivery systems remain reliable; and *second*, but no less important, to obtain the best prices for Maryland ratepayers. To a large extent, solutions that address the causes of high

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<sup>63</sup> *Id.*

prices also solve reliability concerns. For example, as we discuss below, adding certain types of new generation in Maryland should result in lower bills for ratepayers, but it also adds new capacity and, therefore, responds to reliability concerns. Conversely, if Maryland's goal in re-regulating the market were merely to address reliability concerns, the minimum response will not necessarily result in the lowest possible prices. In fact, this point lies at the heart of Levitan's analysis.

In the course of modeling various re-regulation scenarios, Levitan *assumed* that Maryland would always meet minimum reliability thresholds, that the new generation options we asked the firm to consider *added to* whatever new generation was needed to maintain reliability.<sup>64</sup> The Levitan Report assumed that the *market* would maintain system reliability through the periodic addition of peaking plants (with low capital costs but high fuel costs) throughout the 20-year study period. Levitan assumed that roughly 220 MW in new capacity would be added in SWMAAC *each year* just to keep pace with the growth in demand. Levitan assumed that merchant generators would add these peaking units, at no direct cost to ratepayers, and so no specific rate impact was modeled. Levitan's modeling demonstrates, then, creating additional new capacity beyond that needed for reliability, or through the addition of new plant with higher capital costs but much lower fuel costs, creates the potential for rate reduction.

In determining the most prudent interventions, we have considered both the short term and long term implications of the different options. Although ensuring the reliability of the system in the short term is the first priority, an optimal solution would address both short-term reliability and reduce rates in the short- and long term.

The Levitan Report analyzes the costs and benefits of different options through the year 2027, a 20-year horizon.<sup>65</sup> Although many assumptions are embedded in such an analysis, most notably relative to fuel costs in the long term, it is important to model over a long horizon because many projects involve large capital outlays and take years to implement or complete (and to realize any benefits). Some options may appear to be attractive in the short term, but less so in the "out-years." Our recommendations take both the short- and long term into account.

### **3. The Relationship Between Transmission And Generation Influences Re-Regulation Options**

As we consider options for re-regulating Maryland's electricity market, it is important to understand the interrelation between transmission and generation, and the impact that the prospect of each can have on the other. Each is a type of supply. The TrAIL or PATH lines each serve to increase available electricity in the State, and creating additional capacity, *i.e.* supply, will depress capacity prices. In fact, as discussed below, the addition of one new line could initially depress capacity prices by \$65MW in SWMAAC. Because new transmission reduces capacity prices, these projects are not in the economic interests of generators who now benefit from current

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<sup>64</sup> See Levitan Report at 106-07.

<sup>65</sup> *Id.* at 139-59.

(high) capacity prices. And these projects could weaken the appetite of merchant generators to build new generation.

To further complicate matters, the economics of these two supply options are quite different. Under FERC rules, the costs of transmission lines like these are allocated or “socialized” across a much broader area. Also, transmission is, in general, a less expensive alternative than generation. This means Maryland would not pay the entire cost of the TrAIL line, or likely anything close to it. The cost to Maryland ratepayers of new in-state generation equivalent to the import capability of one of the two lines would be much higher.

That said, while transmission is a cost-effective option in terms of ratepayer costs compared to ratepayer benefits, it is also the option over which Maryland regulators and policy makers have the least control. At this point, the TrAIL line falls completely outside Maryland’s boundaries, and its fate rests with the regulatory processes in other states. The PATH line terminates in Maryland, but must receive the approval of other state regulators. And just as transmission can discourage new generation, the opposite is also true. That means that if we were to require utilities to procure new generation in the Maryland, we could inadvertently contribute to the case *against* new transmission:

Commission action to stimulate new entry or reduce the demand for electricity in Maryland may have a direct bearing on both the economic and reliability rational underlying the [TrAIL] project or the other proposed projects.<sup>66</sup>

Because transmission is largely beyond the control of the Maryland’s regulatory or legislative authority, it may not properly be considered a re-regulatory option. Nonetheless, the PSC asked Levitan to model the impact of one of the lines given the extensive advocacy for the lines by PJM and affected utilities, and its potential impact on ratepayers from both a price and reliability standpoint.

#### **4. Options For Re-regulation**

In this section, the PSC addresses the particular re-regulation options outlined in the Kaye Scholer Report, utilizing that analysis as well as data from the Levitan Report and the hearings the Commission has convened during the last nine months. As described on the preceding section, Maryland’s current market is characterized by high prices and a potential shortfall in capacity needed to “keep the lights on” or air conditioners running, during peak hours on hot summer days in the coming years. The immediate task at hand requires us to ensure first that short-term reliability needs are met, then to establish a market or regulatory structure that achieves the lowest utility bill in the most cost-effective manner.

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<sup>66</sup> *Id.* at 128.



**a. Option 1: Utility Ownership of All In-State Generation and a Return to Cost-of Service Regulation.**

One option identified in the Kaye Scholer Report is “full” re-regulation – *i.e.*, a return to utility ownership of all generation resources in the state.<sup>67</sup>

A return to full re-regulation would provide the State (and the PSC in particular) with much greater control over the costs ratepayers pay for the energy portion of their electric bills. Rather than having utility rates being determined in the wholesale markets, electricity rates would once again be based on traditional rate-of-return principles.

This renewed control would come at a serious, and ultimately prohibitive, cost. Full-blown re-regulation could theoretically be accomplished by ordering the utilities to re-purchase all of the generation assets located in Maryland (after the State condemned the plants), a direction that would undoubtedly precipitate litigation by the current owners. But even assuming there were no legal barriers, the cost would be infeasibly high: *Levitan estimates the fair market value of Maryland’s generation fleet at \$18-\$24 billion.*<sup>68</sup> This estimate is admittedly a rough one, but demonstrates the order of magnitude and, ultimately, that this “option” is simply not viable. And ratepayers would feel the pain: if the utilities were to purchase these assets, rates would have to reflect the massive cost of reacquisition. Although this means that the costs associated with the wholesale market such as RPM would be avoided for any-in state generation, ratepayers would bear other costs and risks directly that they now bear indirectly or not at all, and this would have an offsetting impact on rates.

Even if full re-regulations were possible financially, it still would not completely solve Maryland’s reliance on the wholesale market. Maryland still be a net importer of electricity, and thus would continue to purchase over 20% of its load in the wholesale market. Additionally, full re-regulation would not address the reliability issues discussed in detail in this report despite the huge cost of re-regulation. And rate payers would assume the future costs of all operational risks and environmental upgrades for an aging fleet of power plants.

Although the concept of re-regulation for many people is often expressed as “going back to the way it was before restructuring,” our consultants’ reports illustrate that this option is simply not a practical one. Aside from the fact that no other state has tried it, re-capturing the previously regulated generating fleet leaves reliability problems unsolved, is not financially practical, and would be met with legal challenges that would prevent or inordinately delay its implementation. In any event, the purchase price associated with reacquiring the state-wide generation fleet is so great

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<sup>67</sup> See Kaye Scholer Report at 68-73.

<sup>68</sup> Levitan Report at 80.

that this approach could not result in any financial benefit to ratepayers, and we do not recommend any further consideration of this approach.<sup>69</sup>

**b. Option 2: Utility-Directed Long-Term Contracts**

**i. The Advantages of Long-Term Contracts**

As an alternative to recapturing Maryland's *existing* generating fleet, Kaye Scholer and Levitan suggest that the PSC direct Maryland utilities to procure new generation through long-term contracts. The PSC already has the authority to require utilities to buy or build generation, or to enter into long-term contracts for the purchase of electricity, so no new legislative authority would be necessary.

Under this option, utilities would enter into long term contracts for, but would not own outright, new generation in the State. These long-term agreements would induce the entry of new generation by providing the owners of new generation with a committed buyer of the supply, the utility, backed by revenue stream from rate payers for all or a portion of the output from a power plant. This arrangement insulates the owner from any market risks – risks that external events in the market will render the investment in the plant unattractive in the market.

Although this option (and others) would require certain trade-offs, Kaye Scholer identified the following advantages:

- With long-term contracts, the State can control or influence the timing, location, and fuel type of the new generation;
- With long-term contracts, the State can reduce the cost of the investment for the generation by backing the new investment with assurances that payments will be made through utility rates, lowering capital costs; and
- Through such contracts, the State can attract new generators, enhancing competition and diversifying supply in the state.

The Levitan Report also describes the positive impact on the cost and allocation of debt and equity a utility backing project can have on a project.<sup>70</sup> Utility backing of a project can materially lower the costs of both debt and equity financing.

Admittedly, as Levitan points out, there are some benefits to utility-owned new generation as well.<sup>71</sup> For example, as with utility-backed projects, utility-owned and

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<sup>69</sup> There is an altogether separate question about the validity of the settlements made with utilities at the time of the divestiture of their generating assets in 2000, and specifically the stranded costs those settlements recognized and that ratepayers paid after divestiture. The PSC is currently investigating those settlements with the assistance of Kaye Scholer, and expects to issue its report prior to the commencement of the 2008 Session.

<sup>70</sup> See Levitan Report at 77-78.

<sup>71</sup> See *id.* at 80-81.

financed projects will reduce the cost of equity and debt because of the utilities' ability to ensure cost recovery from ratepayers. And as with utility-directed generation, the timing and scope of utility-owned generation can be subject to greater state input and oversight than merchant generation.

However, Levitan and Kaye Scholer both identify risks with the utility-ownership option as well, such as the lack of current expertise resident in the utilities in managing construction projects and operating the plants.<sup>72</sup> Having divested their generating assets, the expertise to construct and run power plants no longer resides in the utilities and would need to be reestablished. In the survey of other states in similar circumstances to Maryland's set out in the Kaye Scholer Report, states have largely taken the utility-directed approach rather than compelling utilities to re-enter the realm of plant ownership. In addition, and importantly we believe, outright ownership places all long-term operational and market risk on the utility, and therefore the ratepayers.

Both Reports identify a number of different options for long-term contracts. These include options for capacity only, the approach taken by Connecticut. In that case, the state issued RFPs and selected four projects totaling 787MW of new capacity, including a new 620MW gas fired combined cycle base load plant. Delaware directed Delmarva Power & Light to issue RFPs for the purchase of 400MW of new generation under a long term power purchasing agreement, to be operational by 2013, although the Delaware Commission recently rejected the proposals because none of the bidders met the state's requirement.<sup>73</sup>

Given the information presented in both Reports, and the testimony received in hearings before the PSC, particularly Case No. 9117 Phase II, we conclude that the best alternative for ratepayers appears to be directing utilities to issue RFPs for long-term contracts for some combination of new in-state capacity, energy, or both. This option appears to offer many of the same benefits as utility-owned new generation, but minimizes the risks to ratepayers associated with ownership.

#### **b. Analysis Of The Costs And Benefits Of Long-Term Contracts For New Supply In Maryland**

In this section we address the extensive analysis performed by Levitan in modeling supply options for Maryland. To the extent the options involve new generation, it was assumed that the new generation would involve a long-term purchased power arrangement ("PPA") with utilities in the state. The Levitan Report details the extensive inputs and assumptions used to conduct the modeling and those will not be repeated here. The PSC notes, however, that in order to respond to the General Assembly on time, the PSC could not conduct, and did not request, that Levitan perform a full "integrated resource plan," in which an optimal mix or combination of technologies is employed. Rather, the Levitan Report provides meaningful comparisons among and between various choices of supply.

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<sup>72</sup> See *id.*; see also Kaye Scholer Report at 73-74.

<sup>73</sup> Kaye Scholer Report at 74.

With the direction of the PSC, Levitan developed a base case or “reference case” against which all scenarios were compared for each cost/benefit analysis:

The *Reference Case* represents Maryland’s existing generation resource mix, transmission infrastructure, and a limited level of demand side management (“DSM”), but no new initiatives to foster an increase in generation supply or a decrease in electricity demand. For the *Reference Case*, we have incorporated about one-fourth of the total DSM objective associated with Governor O’Malley’s “15 by 15” Initiative – a 15% reduction in per capita energy demand by 2015 – which the State may be able to achieve with existing programs. Because the *Reference Case* limits resource additions to peakers through 2027, it does not include new high-voltage transmission “highway” projects, new combined-cycle or coal plants, new in-State renewable energy resources (e.g., wind), or a new nuclear plant. In terms of renewable energy, we assumed in the *Reference Case* that each Maryland utility will continue to comply with Maryland’s renewable portfolio standard (“RPS”), but will meet only the mandatory solar component through photovoltaic additions within Maryland.<sup>74</sup>

One assumption that was the subject of extensive discussion prior to the commencement of the analysis related to the role of conservation and demand-side management in the base case. Because the modeling took place after Governor O’Malley announced the EmPower Maryland Initiative, the PSC believed that some incremental energy savings should be built into the reference case. The PSC has developed overall targets for utilities based on the 15% per capita savings contemplated by the “15 by 15” savings in the EmPower Maryland Initiative. But for the base case, Levitan assumed that the utilities would achieve 25% of the 8,500 GWhs in savings needed to meet the EmPower Maryland goal.<sup>75</sup>

After constructing the Reference Case, Levitan modeled the following one-off scenarios:

- **Optimum Mix** – We substituted more efficient but more expensive combined cycle generation plants for one or more peakers over the planning

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<sup>74</sup> Levitan Report at 1-2.

<sup>75</sup> The 8,500 GWh savings figure represents the “low case” estimate of the energy savings necessary to achieve the EmPower Maryland goal. This “low case” is based on the Power Plant Research Project’s load forecast assumptions. The “high case,” based on historical growth assumptions, would require approximately 17,936 GWh of total savings by 2015.

horizon whenever market conditions warrant. We assume that the addition of a combined cycle plant would require a long-term contract with Maryland's utilities.

- **Coal** – We added a 648 MW supercritical pulverized coal plant with state-of-the-art pollution controls in lieu of an equivalent amount of peakers. We assume that the new coal plant would achieve commercial operation in 2015 under long-term utility agreements authorized by the PSC.
- **Nuclear** – We added a new 1,600 MW reactor unit at Constellation's Calvert Cliffs facility. We assume that the new nuclear plant would achieve commercial operation in 2017 under long-term agreements with Maryland's utilities.
- **15 x 15 DSM** – We added ambitious conservation and load management initiatives in the form of utility-sponsored programs and regulatory mandates. These programs reduce Maryland's dependence on new peakers to ensure adequate supply but are primarily oriented to achieving more efficient use of energy around-the-clock. We assume that the utilities' earnings are decoupled from DSM programs so that they have an incentive to promote load reduction. We have quantified total program costs, including residential and commercial costs that are independent of utility programs in order to achieve the full "15 by 15" Initiative.
- **Transmission** – We added one new backbone or "highway" transmission project that will begin serving Maryland in 2015, thereby alleviating congestion and promoting grid reliability throughout the region. The addition of a major new transmission project would lessen Maryland's dependence on new peakers from 2015 throughout the remainder of the study horizon. Under transmission ratemaking principles approved by the Federal Energy Regulatory Commission, the cost of new transmission would be apportioned among

ratepayers in Maryland and ratepayers elsewhere in PJM.

- **Wind** – We added 500 MW of new wind turbines, both onshore and offshore by 2012. Because wind is an intermittent generation resource, only about one-fifth of the total nominal installed capacity can be treated as dependable capacity. Therefore the wind turbines only slightly reduce the need for new peakers to maintain grid reliability. Like the other resource options that comprise the Alternative Cases, we assume that the addition of new wind generation would require long-term agreements authorized by the PSC between wind developers and Maryland’s utilities.
- **Overbuild** – We added a generation reserve surplus of 1,200 MW beginning in 2011. We assume that the reserve surplus will consist of new combined cycle plants in Maryland and will be sustained through the study horizon. Both the 1,200 MW of combined cycle plants as well as gas turbine peakers added later to the resource mix would require long-term contracts with the utilities.<sup>76</sup>

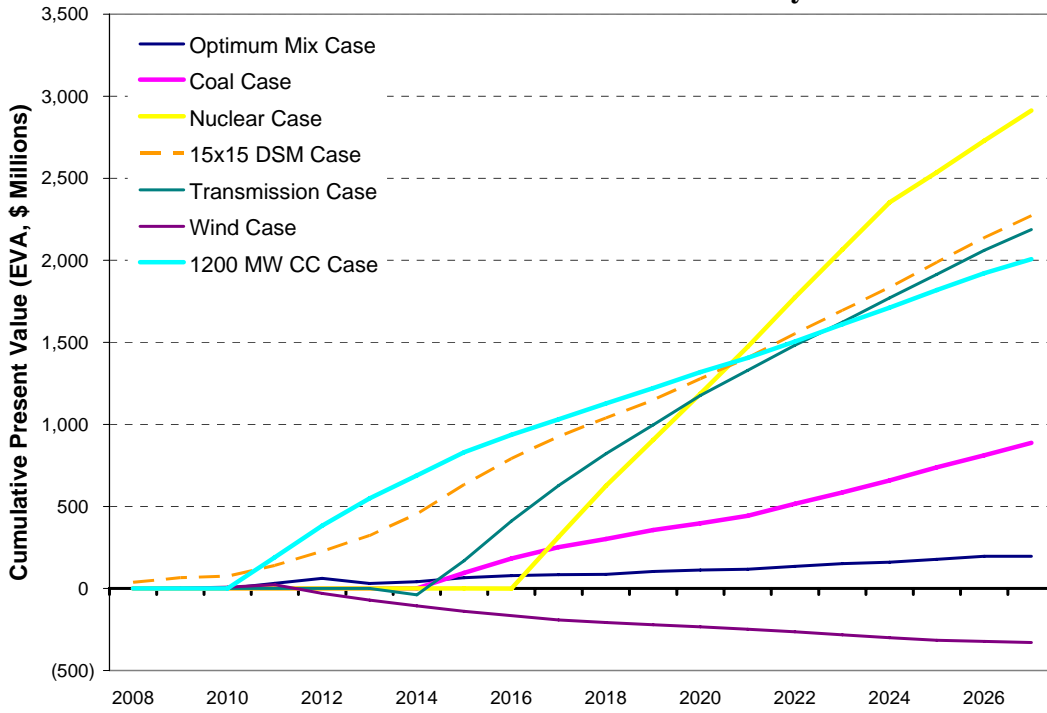
The results of the modeling are most succinctly summarized in the following charts, which show the “Economic Value Added” (“EVA”) above (or below) the Reference Case by each of the one-off options over the 20-year forecasting horizon.<sup>77</sup> The EVA calculation essentially reflects the present value of the total costs and benefits of the options compared to the reference case over the next 20 years, and the results are striking:

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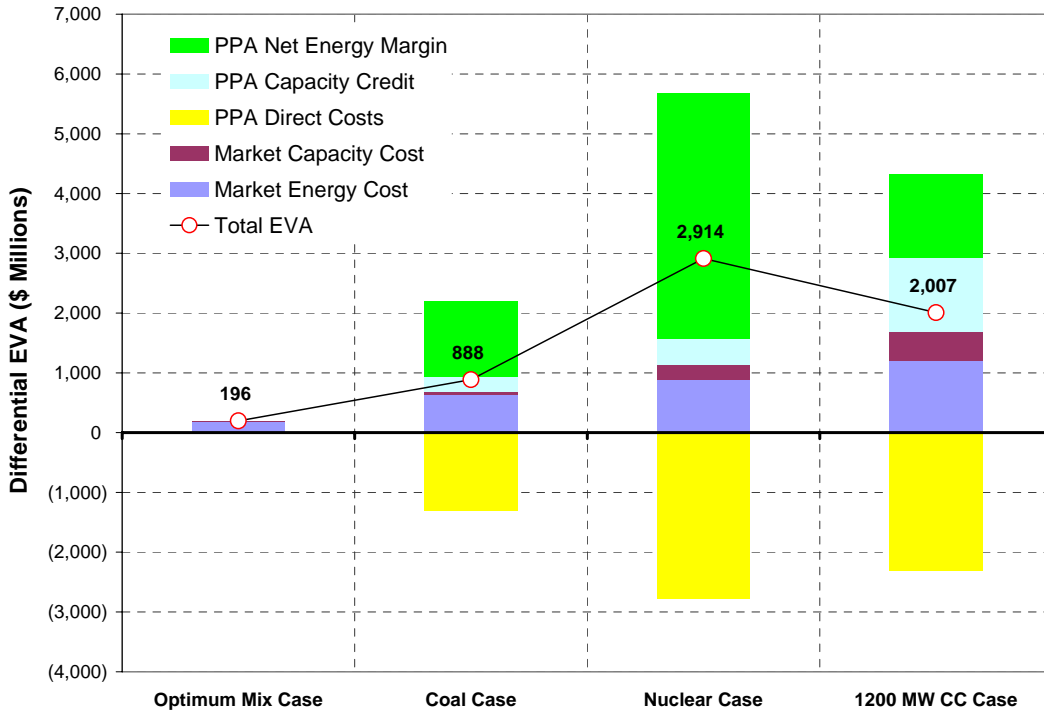
<sup>76</sup> *Id.* at 2-3.

<sup>77</sup> *See id.* at 105-59 for Levitan’s complete analysis; these chart appear at 148-50.

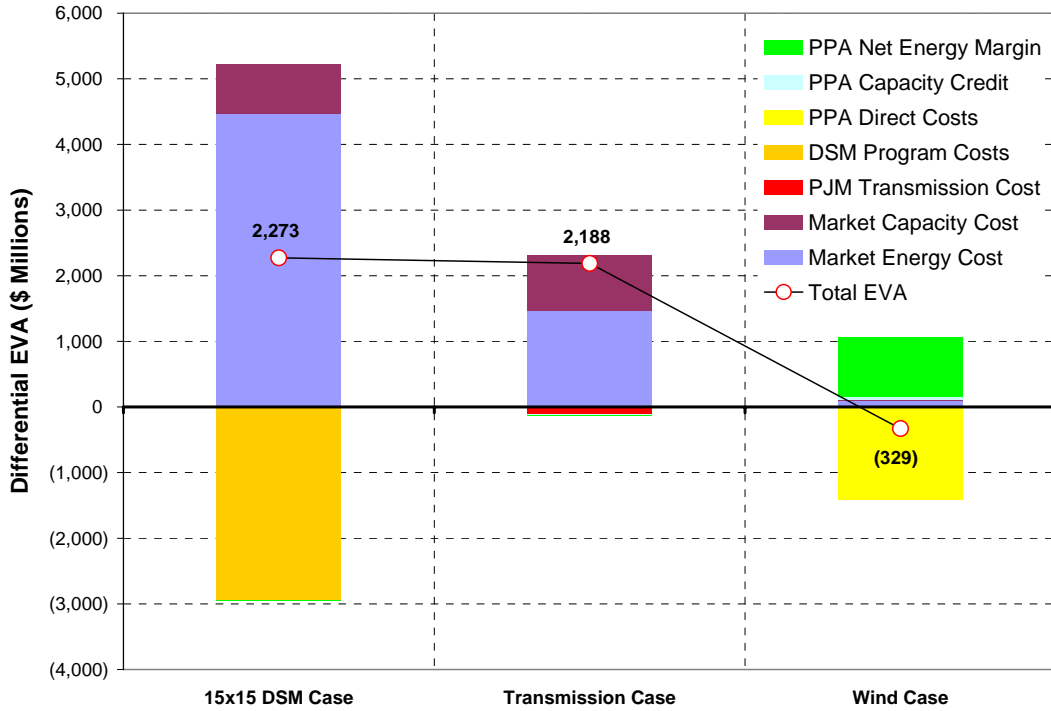
### Cumulative EVA – Alternative Cases Only



### EVA by Component – Generation Cases



### EVA by Component – Non-Traditional Cases



Several critical points emerge from Levitan’s analysis.

*First*, as noted earlier, transmission offers the highest total EVA compared to the costs. New transmission affects both capacity and energy costs because it relieves the physical transmission constraints in the grid. From this perspective alone, it is the most attractive option economically. It also is the “option” that is the most uncertain because its fate resides largely in the hands of other state and federal officials. Also, transmission is cost-effective in large part because it permits the importation of “cheaper” electricity, *i.e.*, electricity generating from coal burning plants west of the major constraints in Maryland. Because, as stated earlier, Maryland cannot “re-regulate” transmission, transmission should be viewed as an external factor that influences, or can be influenced by, decisions on other options.

*Second*, the nuclear case provides the highest cumulative EVA of all scenarios. Given the lead time associated with such a project, price benefits are not realized until 2017, about 10 years from now. Nonetheless, as the cumulative EVA figure from the Levitan Report illustrates, new nuclear generating capacity provides a rapid, substantial and sustained benefit to Maryland ratepayers unmatched over the 20-year horizon by any other option.

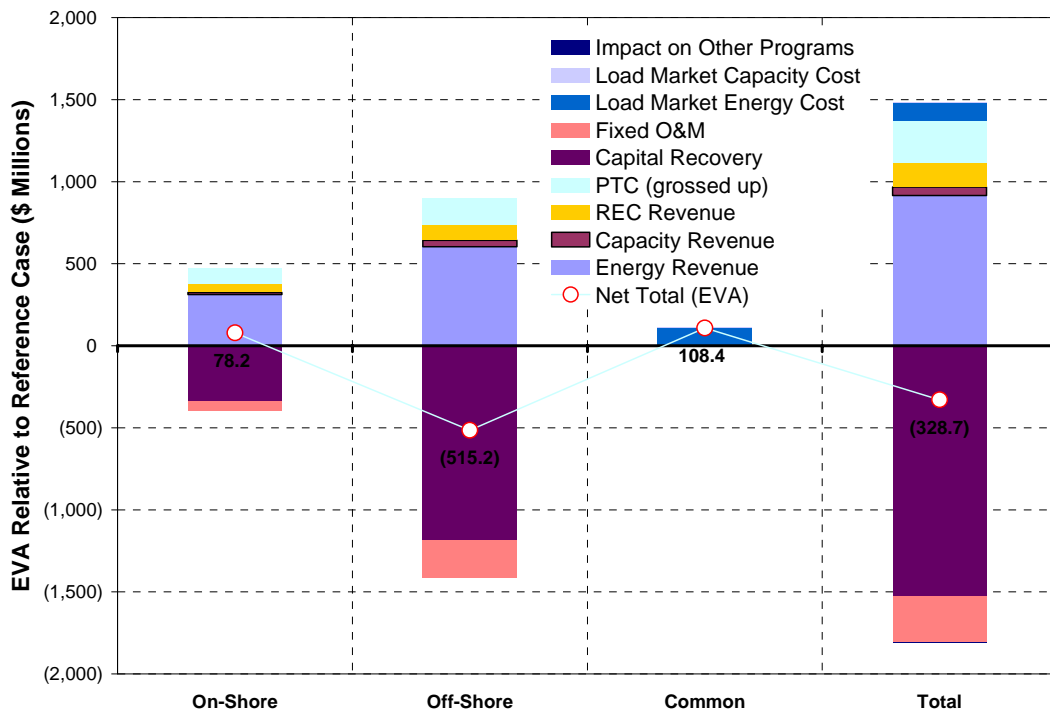
*Third*, the addition of 1200 MW of excess power (beyond the amount needed to maintain reliability) from combined cycle gas plants provides the most substantial benefit in the short term and intermediate term. In the long term, the benefits would



be eclipsed from the nuclear option, but through 2020, the 1,200 MW CC option is the best alternative from an EVA perspective.

*Fourth*, the wind option that Levitan modeled does not provide net benefits in either the short- or long term. As the Levitan Report details, onshore wind projects can be a net benefit to ratepayers, but the relative costs and benefits of offshore wind are not positive. Levitan modeled a scenario that involved 300 MW of offshore wind and 200 MW of onshore wind. The projects modeled have minimal impact on energy and capacity prices – but given their cost, the EVA is a *negative* \$329 million over 20 years. Levitan’s figure illustrates the differences in the EVAs for onshore and offshore wind projects:

### Breakout of Off-Shore, On-Shore Effects



*Fifth*, full attainment of the EmPower Maryland Goal yields a large and positive EVA for Maryland ratepayers, greater than that of the 1,200MW of combined cycle gas option. Levitan estimates that costs for what it describes as an “extremely aggressive” and unprecedented level of conservation<sup>78</sup> are higher than the costs of the gas-fired generation, but that these costs are more than offset by the overall reduction in energy consumption and therefore energy costs. This point is made in the following table from the Levitan Report, which shows the estimated residential ratepayer impact in the BGE territory from achieving the full EmPower Maryland objective. For the DSM option, electric rates increase as a result of the initiative compared to the

<sup>78</sup> *Id.* at 126.

Reference Case and all the other options. But by virtue of the overall reduction in consumption, bills go down and ratepayers benefit materially from conservation:

**Typical Residential Annual Bill – BGE**

Case	Year	Annual Energy, kWh	Annual Bill, \$	% Change from Reference Case	Average Price, \$/kWh	% Change from Reference Case
Reference	2010	12,175	\$1,762		\$0.1447	
	2015	11,810	\$1,940		\$0.1642	
	2020	11,664	\$2,284		\$0.1958	
Optimum Mix	2010	12,175	\$1,762	0.00%	\$0.1447	0.00%
	2015	11,810	\$1,926	-0.70%	\$0.1631	-0.70%
	2020	11,664	\$2,279	-0.22%	\$0.1954	-0.22%
Coal	2010	12,175	\$1,762	0.00%	\$0.1447	0.00%
	2015	11,810	\$1,891	-2.51%	\$0.1601	-2.51%
	2020	11,664	\$2,256	-1.24%	\$0.1934	-1.24%
Nuclear	2010	12,175	\$1,762	0.00%	\$0.1447	0.00%
	2015	11,810	\$1,940	0.00%	\$0.1642	0.00%
	2020	11,664	\$2,100	-8.07%	\$0.1800	-8.07%
15x15 DSM	2010	11,924	\$1,753	-0.49%	\$0.1470	1.61%
	2015	9,896	\$1,833	-5.50%	\$0.1852	12.78%
	2020	9,896	\$2,164	-5.25%	\$0.2187	11.68%
Transmission	2010	12,175	\$1,762	0.00%	\$0.1447	0.00%
	2015	11,810	\$1,828	-5.78%	\$0.1548	-5.78%
	2020	11,664	\$2,143	-6.18%	\$0.1837	-6.18%
Wind	2010	12,175	\$1,760	-0.07%	\$0.1446	-0.07%
	2015	11,810	\$1,953	0.67%	\$0.1654	0.67%
	2020	11,664	\$2,292	0.35%	\$0.1965	0.35%
1200 MW CC	2010	12,175	\$1,762	0.00%	\$0.1447	0.00%
	2015	11,810	\$1,870	-3.61%	\$0.1583	-3.61%
	2020	11,664	\$2,209	-3.30%	\$0.1893	-3.30%
Low Fuel	2010	12,175	\$1,634	-7.22%	\$0.1342	-7.22%
	2015	11,810	\$1,713	-11.69%	\$0.1450	-11.69%
	2020	11,664	\$1,920	-15.91%	\$0.1646	-15.91%
High Fuel	2010	12,175	\$1,796	1.98%	\$0.1476	1.98%
	2015	11,810	\$2,120	9.28%	\$0.1795	9.28%
	2020	11,664	\$2,506	9.75%	\$0.2149	9.75%

**c. Conclusions Regarding Long-Term Utility Contracts for New Generation**

The analyses by Levitan and Kaye Scholer combine to create a compelling case for directing utilities in the state to enter into long-term contracts to induce the supply of new electricity in Maryland. This is a “re-regulation” option that we believe should be pursued and that we intend to pursue.

Several factors support this view. *First*, Levitan's initial economic modeling shows that the addition of new generation in the state can serve to lower costs for ratepayers. In cases of new generation, cost reductions to ratepayers flow from the net benefits from lower energy and/or capacity costs after new supply is introduced. *Second*, the Kaye Scholer Report explains how states that are more advanced in their approach in addressing supply inadequacies have adopted this approach. We believe this approach balances competing trade-offs for the benefit of ratepayers and does so at a reasonable cost.

Although transmission additions such as the TrAIL line would address reliability and cost issues as well, the prospect that even one of the lines will be completed in the 2011-2012 timeframe is uncertain at best. While the testimony from utility representatives was optimistic if not vague, several facts suggest the lines may well be delayed or not built at all. For the same reason that we find it unsatisfactory to wait for the market to solve Maryland's challenges, we find as well that we cannot hope or wait for the TrAIL or PATH lines to solve them. The prospect for new, material transmission expansion such as the TrAIL or PATH lines is uncertain enough that, in our view, Maryland must take action on its own to address the reliability issues we face and secure the lowest possible rates for ratepayers.

Although we reach our conclusions regarding long-term contracts on our own, parties appearing before the PSC in recent cases also have urged us to prepare for the prospect of procuring energy for reliability through long-term utility contracts. In Case No. 9117, several parties – including the Maryland Energy Administration, the Office of the People's Counsel, and Staff for the PSC – agreed that the State must prepare for the potential shortfall in capacity for the 2011-2012 timeframe by directing the utilities to develop RFPs for new generation that could be issued by the summer of 2008. This testimony bolsters the views of our consultants and adds to our confidence in this approach.

We plan to implement the long-term contracting strategy over the next six months. Before directing the utilities to enter contracts, the PSC will monitor and evaluate the next two RPM auctions to be held by PJM for the planning years 2010-2011 and 2011-2012, which will take place in January 2008 and May 2008, respectively. We will determine if the trends of the previous auctions, in which the capacity offered was insufficient to meet reliability standards, have reversed and, therefore, whether the market has responded adequately for these two critical years. Because the results of both auction will not be known until May 2008, only 36 months before reliability margins are at risk, we will devote the intervening time to a more in-depth study of the specific components of the contracts we would direct the utilities to enter so that we could direct the utilities to issue Requests for Proposals for these contracts immediately after the May 2008 auction, if necessary.

Given that the prospect of procuring capacity in the short term through utility contacts is already under consideration by the PSC in Case No 9117, we believe that the prudent approach is not simply to seek the amount of capacity needed to ensure

reliability criteria are met, but to also seek a more extensive portfolio, as Levitan's analysis suggests. However, as discussed above, even the reliability shortfall is significant – approximately 1,500 MW for Maryland and 6,500MW for the region – and we may determine that the utilities will need to procure substantial additional capacity to satisfy Maryland's reliability needs. PSC staff witness Jerry Hughes testified that “[i]t is likely in the long term, two generating stations of [600MW each] will be required to satisfy the growing electricity demand in Maryland.”<sup>79</sup> We will err on the side of requiring more than the minimum amount of additional capacity, although we will endeavor to strike the appropriate balance.

Beginning in January or February 2008, then, the PSC will direct Maryland's Investor Owned Utilities to begin preparing Requests for Proposal for long-term power contracts to be issued, if necessary, in May 2008, under the supervision of the PSC. In the meantime, the PSC will determine the appropriate scope of the Requests for Proposal, the types of contract(s) the utilities will be required to seek, the amount of generation they will be required to procure, fuel type, and other key variables.

### **c. Option 3: State Power Authority**

Some states have considered or enacted legislation to create state power authorities. The State of Illinois, for example, recently enacted legislation to establish a state power authority with a broad range of responsibilities such as developing procurement plans for default service, constructing new generation in the state, and selling power to various groups of consumers in the state such as government aggregators or rural electric cooperatives. The Illinois power authority is also charged with promoting energy efficiency programs.<sup>80</sup>

Kaye Scholer identified a number of functions that could be performed by a state power authority, including:

- Analysis of available and prospective resources necessary to meet Maryland's needs (*i.e.*, integrated resource planning);
- Aggregation of efficiency or demand management resources;
- Procurement and/or development of prospective generation sites for resale to prospective generators;
- Stimulation of renewable energy projects in the state;
- Contracting directly for all or part of the utilities' load in the state; and
- Direct ownership of generating facilities to satisfy all or part of the utilities' load in the state.<sup>81</sup>

The Kaye Scholer report identifies some advantages to some of these proposals, particularly as it relates to the development of new generation in the state.<sup>82</sup>

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<sup>79</sup> Testimony of Jerry Hughes, Case No. 9117, Phase II, at 11.

<sup>80</sup> See Kaye Scholer Report at 49 and 81-83.

<sup>81</sup> *Id.* at 81-83.

<sup>82</sup> *Id.*

For example, a state power authority can have significant cost advantages over a utility when it comes to constructing and operating a power plant. A state-operated plant would pay no taxes, would have lower costs of capital and not have equity investors requiring a return on equity capital. It also could direct the development of certain types of new generation that the market may not be ready to fully embrace.

On the other hand, all the risks attendant with ownership and operations, including the investment risk associated with the power plant and market risks, to name just two. This approach to re-regulation moves even beyond the State requiring the utilities to enter into long-term contracts or to build new plants – it places the State squarely into the energy business.

When it comes to the construction or development of new generation, there may be potential advantages to placing the State in a role that is beyond regulation, *i.e.*, in the business of owning and running power plants. However, we believe that this approach requires further analysis and study. With respect to most of the other functions of a state power authority identified by Kaye Scholer or enacted by Illinois, however, most of those functions are currently with the statutory authority of the PSC.

#### **d. Option 4: Integrated Resource Planning**

The Kaye Scholer Report identifies the reinstatement of integrated resource planning (“IRP”) as one type of re-regulation.<sup>83</sup> As described in the Report, the IRP process was a staple of the pre-restructuring, regulated paradigm, in which utilities engaged in long-term planning so that resources would be available to meet needs in the short- and longer terms. In those days, the State had an active role in overseeing the plans and their implications.

Restructuring has largely disintegrated that process. Since de-regulation, utilities have largely left the planning and development of new generation to the market, *i.e.*, merchant generators. Testimony before the Commission clearly indicated that utilities also view PJM, not the State, as the party responsible for the planning needed to ensure a reliable grid.

Because, as discussed above, we cannot leave the planning for Maryland’s energy future entirely in the hands of market forces, we believe that reinstating and reinvigorating the IRP process is a critical component of any re-regulatory initiative. Planning the appropriate mix of cost effective resources – transmission, conservation and new generation – should be one of the core functions of the PSC. To this end, the PSC has initiated plans to develop a dedicated in-house IRP unit. The exact staffing, budget, and consulting assistance needed to re-establish an IRP process is still being developed.

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<sup>83</sup> *Id.* at 83-85.

e. **Option 5: Aggressive Efforts To Shape PJM's Wholesale Markets**

As this report describes, and as Kaye Scholer confirms, wholesale market policies significantly impact the prices the residents of restructured states pay for power.<sup>84</sup> Under any realistic re-regulation scenario, Maryland will continue to rely on the wholesale market for a large portion of its electricity. It is, therefore, critical that the state play as an active and aggressive role as possible in the development of those policies. As Kaye Scholer points out, the state of Connecticut pursued this approach with some success.

The PSC has already taken several steps on this front. The PSC has hired new senior staff with direct experience in wholesale markets and FERC proceedings. In addition, the PSC has asked Levitan to perform a detailed analysis on the impacts of LMP and RPM on Maryland ratepayers beyond that performed by the PSC in-house. And finally, the PSC has retained Kaye Scholer to analyze legal options relating to challenges to various aspects of the wholesale market design and, if necessary, to assist the PSC in pursuing them.

In summary, we agree that active and vigorous engagement at the federal level is a vital part of any re-regulatory process, and that the more passive, market-based approach of the PSC on such key issues in the past must end. We note that the players who stand to benefit most in such proceeding, such as the merchant generators, have broad and deep representation before FERC. We agree that the State must take steps to level the playing field, and that process has already begun at the PSC.

## V. CONCLUSION

This represents the Interim Report of the Maryland Public Service Commission to the General Assembly pursuant to S.B. 400. The PSC will continue to examine these and other possible "re-regulation" options in the coming year and will submit its Final Report on these issues no later than December 1, 2008.

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<sup>84</sup> *Id.* at 85-87.