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**PUBLIC SERVICE COMMISSION**

IN THE MATTER OF TRANSFORMING  
MARYLAND’S ELECTRIC  
DISTRIBUTION SYSTEMS TO  
ENSURE THAT ELECTRIC SERVICE  
IS CUSTOMER-CENTERED,  
AFFORDABLE, RELIABLE AND  
ENVIRONMENTALLY SUSTAINABLE  
IN MARYLAND

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BEFORE THE  
PUBLIC SERVICE COMMISSION  
OF MARYLAND

PC44

Issue Date: January 31, 2017

**NOTICE**

To: All Interested Persons

The Public Service Commission of Maryland (“Commission”) held an initial public hearing on December 8 and 9, 2016 during which we heard from thirty presenters.<sup>1</sup> Prior to the hearing, forty-six organizations and individuals provided comments in response to the

<sup>1</sup> The presenters were: Scott Baker (PJM Interconnection); Christine Stearn (Smart Electric Power Alliance); Mari Hernandez (Interstate Renewable Energy Council); Josh Berman (Sierra Club); Jordan Gerow & Radina Valova (EarthJustice: Pace Energy & Climate Center); Kevin Miller (ChargePoint); John Fernandes (Renewable Energy Systems Americas); Jake Oster (EnergySavvy); Director Mary Beth Tung (Maryland Energy Administration); Eric Coffman (Montgomery County); Robert King (The Mission:Data); Keith Townsend (Apartment and Office Building Association); Myriam Tourneux (Energy Advocates); Ingrid Schwingler (GRID Alternatives); Janet Christensen-Lewis (Kent Conservation and Preservation Alliance); Peter Fuller (NRG); Tony Cusati & Kristina Montgomery (IGS Energy & Just Energy); Austin Whitman (First Fuel); Terrance Hill (Emerge Alliance); Ben Lowe (Alevo); Mike Majoros (Wired Group); Paula Carmody & William Fields (Office of People’s Counsel); Ed Comer (Edison Electric Institute); Mark Case and Rob Stewart (Baltimore Gas & Electric Co. & Pepco Holdings, Inc.); Tom Pryatel & Ray Valdes (Potomac Edison); Ted Duver (Southern Maryland Electric Cooperative & Choptank Electric Cooperative); Paul Verchinski (citizen); and Arjun Makhijani (citizen).

Commission's request.<sup>2</sup> The presenters and parties included utilities, state government entities, citizens, unaffiliated groups (e.g. PJM Interconnection), businesses, advocates and citizens.

We appreciate the broad and thoughtful stakeholder interest in this proceeding and the varying perspectives provided through written and oral comments. After considering all comments, we provide in this Notice: a broad statement of some guiding principles for this proceeding; a description for how we intend to direct the spending of \$500,000 provided by Pepco Holdings, Inc. (PHI) as a condition for approval of the Exelon/PHI merger in Case No. 9361; a revised scope of the proceeding to better achieve our goals; and clear action steps and a proposed timeline moving forward. With this plan in place, we are optimistic that this proceeding will result in demonstrable results that will improve Maryland's electric distribution systems and benefit Maryland residents, businesses, utilities and stakeholders now and into the future.

### **Background**

We are authorized and poised to address grid modernization. The General Assembly has set ambitious targets through the Greenhouse Gas Reduction Act<sup>3</sup> and Renewable Portfolio Standard.<sup>4</sup> Meanwhile, smart meters (AMI) are the foundational building block for modernizing the electric grid – and many Maryland customers already have one installed. Maryland utilities have instituted some forward-looking programs, such as dynamic pricing and Electric Vehicle (EV) time-varying rates, but much more might be done – as was shown in recent public conferences on Distributed Energy Resources and EVs.<sup>5</sup> In addition, many other states are

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<sup>2</sup> See the PC44 docket at [www.psc.state.md.us](http://www.psc.state.md.us) to review written comments.

<sup>3</sup> Maryland must reduce statewide greenhouse gas emissions by 40% from 2006 levels by 2030. Maryland Code, Environment Article, § 2-1204.1.

<sup>4</sup> Maryland Code, Public Utilities Article (PUA), § 7-703.

<sup>5</sup> See Public Conference 40 and Public Conference 43.

moving forward with grid modernization. This proceeding will explore how Maryland residents and businesses can receive improved electric services that are competitive and cost-effective.

### **Statement of Guiding Principles**

Several parties recommended that we provide a statement of some guiding principles at the outset of this proceeding. We agree. Providing some principles in this Notice will allow stakeholders to seek solutions consistent with them. Below are some guiding principles for the future of Maryland's electric distribution systems:

- a. Electric service should be reliable, cost-effective, and environmentally sustainable for numerous reasons, including the growth of Maryland's economy, and there should be a balance among these three objectives;
- b. Universal access to electricity for all Marylanders is a bedrock principle of Maryland public utility regulation, so evaluating ratepayer impact – particularly for limited-income Marylanders – is always a factor;
- c. New and improving technologies are driving fundamental change in Maryland's electric distribution systems, and we want to enable and seamlessly integrate technologies that will result in clear benefits – including cost reductions – for Maryland's electric customers;
- d. Competitive markets are an integral part of Maryland's electricity landscape that seek to promote innovation, reduce costs, and increase customers' choices;
- e. Electric distribution companies and cooperatives should maintain their current role as the operators of Maryland's electric distribution grid;

- f. Electric distribution companies and cooperatives must serve as impartial grid operators, particularly when non-regulated affiliates are market participants;
- g. As an alternative to traditional cost-based rates, performance-based incentives or alternative revenue collection methods might be appropriate for consideration; and
- h. Collaboration between stakeholders, and particularly with Maryland state agencies, is the preferred method of developing lasting solutions.

During the next 18 months, we want to consider demonstrable actions, such as starting and assessing pilot programs (with defined scopes, timelines and exit strategies) and drafting regulations as appropriate, in the topic areas outlined below.

### **Consultant**

As a condition of approving the Exelon/PHI merger, we required PHI to submit a “grid of the future” plan and commit \$500,000 of non-ratepayer funds to support a consultant (or consultants) for that effort.<sup>6</sup> PHI submitted its compliance filing on June 30, 2016.<sup>7</sup> In that filing, PHI suggested that we procure a consultant for this proceeding in the same way that we retain a consultant to advise on the utilities’ Standard Offer Service (SOS) selection process.<sup>8</sup>

Consistent with that recommendation, we direct PHI to issue a Request for Proposals (RFP) for a Commission consultant to study the benefits and costs of distributed solar in the service territories of Investor Owned Utilities and related items as specified below.<sup>9</sup> As

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<sup>6</sup> Order No. 86990, Case No. 9361 at A-19 (Merger Condition 14).

<sup>7</sup> Maillog #194301

<sup>8</sup> *Id.* at 1. *See* Case Nos. 9056 and 9064 for more information about the Commission’s SOS selection process.

<sup>9</sup> Although we do not adopt the term “Value of Solar” study, others have used that term to describe similar studies. We have initiated a separate study of the benefits and costs of distributed solar in the State’s two electric cooperatives in PC46.

recommended by the Maryland Department of the Environment, the study should include a Maryland-specific analysis of distributed solar's health and environmental benefits.<sup>10</sup> It should also focus on distributed solar's geographic and grid location (i.e. valuing the cost of lost open space, agricultural and ecological services, and the grid benefits of load-offsetting generation),<sup>11</sup> and how an advance in energy storage technology or cost-effectiveness could enhance the benefits of distributed solar in Maryland.

We are cognizant of the need to appropriately scope the study to ensure it fits within the funding parameters and is sufficiently targeted to produce actionable information. PHI should file a draft RFP for Commission review soon, with consultant selection occurring in the spring and a final study report due in late 2017, so the Commission can act on the study's findings promptly.

### **Revised Scope of PC 44 Proceeding**

In our initial Notice, we suggested seven topics for consideration in this proceeding. After reviewing written and oral comments, we will slightly amend the list of topics to better align with possible long-term outcomes.

1. Rate Design
2. Electric Vehicles
3. Competitive Markets and Customer Choice
4. Interconnection Process
5. Energy Storage
6. Distribution System Planning (if sufficient funding available)

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<sup>10</sup> See Maryland Energy Administration Initial Comments, Dkt. No. 52, at 2.

<sup>11</sup> See, e.g., Initial Comments of Janet Christensen-Lewis (on behalf of Kent Conservation and Preservation Alliance), Dkt. No. 50, at 2-3.

These revised topics, as further described below, are ripe for action in this proceeding. Efforts within and between topic areas should be coordinated so that there is one unified proceeding with several components, rather than several different efforts operating independently. We believe that this agenda is scoped appropriately and that we can ensure that meetings and deadlines are coordinated between the groups to ensure progress.

Each topic area will be addressed through a separate workgroup led by a Commission Advisor. Although we recognize that this large number of new workgroups can create challenges for stakeholders, we believe that splitting into smaller groups will allow more focused and productive work environments. Workgroup leaders will strive to jointly schedule meetings when appropriate to accommodate schedules, particularly for those traveling from out-of-town.

Of course, we know that efforts to modernize Maryland's electric distribution systems are ongoing and will continue far into the future. But the action items identified in this Notice should be finished by June 2018.

### **1. Rate Design**

Setting just and reasonable rates is a cornerstone of our statutory obligation. As distributed energy resources, particularly behind-the-meter solar, become more common on Maryland's grid, it is appropriate to begin assessing whether more can be done to ensure that rate structures account for evolving technology. In particular, we want to explore whether time-varying rates that value the benefits and costs of distributed solar could both empower customers and provide appropriate market signals, helping customers, utilities and all other stakeholders.

Already in Maryland, we have demonstrated the value of time-varying pricing through

dynamic pricing at peak times.<sup>12</sup> Through this proceeding, we want to explore other forms of time-varying pricing, both in retail and distribution rates. For retail rates, the private market should be encouraged to provide customers with time-varying rate options. We also want to explore whether time-varying rates could be one tool to assist low and moderate income (LMI) customers manage the cost of electric service, if combined with a significant educational component.

In this proceeding, we will consider the following possible actions:

1. Implementing one or more time-varying rate pilot programs for distribution rates;
2. Implementing one or more time-varying rate pilot programs for retail rates (unless the private marketplace proffers such a rate option); and
3. Implementing a pilot program with time-varying rates for customers with distributed solar.

Rate Design workgroup leaders: David Littell, Regulatory Assistance Project & Jon Kucskar, Senior Commission Advisor (Jon.Kucskar@maryland.gov)

## **2. Electric Vehicles**

Electric vehicles (EV) make up a burgeoning share of Maryland's vehicle fleet today, and their market share is expected to grow significantly in the next decade.<sup>13</sup> Widespread adoption of electric vehicles would reduce harmful health and environmental effects of automotive transportation but also could strain our electric grid. All ratepayers would benefit if electric

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<sup>12</sup> See, e.g., BGE's PeakTime Rebates and PHI's Peak Energy Savings Credit programs.

<sup>13</sup> Maryland has committed to a goal of 60,000 zero-emission vehicles (ZEVs) on the road by 2020 and 300,000 by 2025. For additional information, see <http://www.mde.maryland.gov/programs/Air/MobileSources/Pages/ZEV.aspx>.

vehicle charging occurs off-peak. That reduces per-user system costs by spreading them across a broader base of electricity usage while not increasing peak load – a primary driver of distribution system costs. Under traditional electricity rates, EV owners are not financially incentivized to charge their EVs during off-peak hours. We have attempted to change this paradigm through approval of EV tariffs, which are now permanent and available for BGE and Pepco customers. However, for the customers that have access to them, these tariffs provide only one option (e.g. customers cannot select a retail supplier) with a limited financial incentive (e.g. modest price differential between on and off peak rates). Accordingly, they have not received significant customer interest. EV owners across Maryland may need more rate options so that they can select the option that is best for their own situation while also benefitting all ratepayers.<sup>14</sup>

The extension of additional EV rate options is not a panacea in terms of fully mitigating any distribution system costs that may result from the widespread adoption of electric vehicles by Marylanders. The realization of an electrified vehicle fleet may present challenges for our grid operators that cannot be fully remediated by off-peak charging. Thus, the development of a coordinated strategy, especially across state agencies and in conjunction with utilities, could mitigate resulting grid-related costs associated with widespread vehicle fleet electrification.

Regarding electric vehicle service equipment (EVSE), we learned a great deal during our discussion in Public Conference 43 about potential options moving forward.<sup>15</sup> That proceeding unveiled the near-consensus that allowing some level of utility involvement in the build-out of EVSE could catalyze the private market, as well as electric vehicle ownership generally.

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<sup>14</sup> It is possible certain regulatory impediments may need to be addressed by this workgroup prior to implementation of EV-only rates, such as clarification regarding AMI meters and smart EVSE with embedded revenue-grade metering capability.

<sup>15</sup> See Public Conference 43.



There is the potential of: incentivizing adoption of electric vehicle fleets by large corporations, municipalities and organizations; promoting workplace charging; and partnering with state agencies and other stakeholders to speed adoption of tariffs and other measures. Furthermore, it is important to ensure equitable access to electric vehicle infrastructure and charging incentives, especially to traditionally under-served communities.

In this proceeding, we will consider the following possible actions:

1. Making the currently available EV tariffs apply in other utility territories (not just in BGE & Pepco territories);

2. Allowing retail choice for EV tariffs in all utility territories;

3. Considering additional rate structures for customers with EVs, including EV-only time-varying rates;

4. Planning a limited utility infrastructure investment in EVSE, working with private industry and identifying locations at which it is difficult to attract private capital for EVSE investment;

5. Developing a strategy in partnership with other state agencies and in consultation with our utilities to address grid-related costs associated with vehicle fleet electrification;

6. Considering unique tariffs for corporate fleets and workplace & commercial EVSE;  
and

7. Partnering with Maryland Department of Transportation and the auto industry to promote the cost savings and other benefits of EV rate structures.

Electric Vehicles workgroup leader: Marissa Gillett, Senior Advisor to the Chairman

(Marissa.Gillett@maryland.gov)

### **3. Competitive Markets and Customer Choice**

As noted in the Guiding Principles section, enhancing competitive markets and customer choice may be key components of modernizing Maryland's electric distribution systems. Markets and choice can help ensure that Marylanders are receiving the services they desire at an affordable cost. One critical component to achieving this is to ensure that the market has appropriate access to data.

Customer data, particularly from smart meters, belongs to the customer. Customers should be able to share data with third parties as easily as is safely possible. Cybersecurity is a real threat that must be taken seriously, but it should not be used as a deterrent to providing customers access to their data.

Retail choice has existed for almost two decades in Maryland. We support retail choice, both as consistent with Maryland's statutory construct<sup>16</sup> and because of our belief that competitive, transparent, and customer-friendly retail markets will benefit customers. Now is the right time to reexamine certain aspects of Maryland's retail choice market, particularly those administrative or process burdens (not related to consumer protection) that discourage customers from selecting a retail supplier.<sup>17</sup>

In this proceeding, we will consider the following possible actions:

1. Developing a statewide standard data sharing format for implementation by utilities that have deployed AMI; and
2. Considering changes to retail choice that will create a more competitive, transparent and customer-friendly market in Maryland.

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<sup>16</sup> See Electric Customer Choice and Competition Act of 1999, PUA § 7-501 *et seq.*

<sup>17</sup> See Comments from IGS Energy and Just Energy, Dkt. No. 36, for examples such as seamless moves, instant connects, and implementation of online look-up tools.

Competitive Markets and Customer Choice workgroup leader: Obi Linton, Director, Office of External Relations (Odogwuobi.Linton@maryland.gov)

#### **4. Interconnection Process**

Interconnecting to the electric grid should be as smooth as possible for both residential and commercial solar generating systems. We received mixed comments in this proceeding about whether interconnection, particularly for residential solar, is quick and customer-friendly. Relatedly, PHI has a plan to publish “hosting capacity maps”<sup>18</sup> that will provide more information to customers and businesses about the best locations to invest in new distributed generation. On both of these issues, best practices from specific utilities may be implemented by others to ensure that interconnection problems do not discourage customers or businesses from investing in Maryland’s clean energy future. In addition, smart inverters might be another foundational technology that could be a cost-effective installation in the long-term to improve the operation of our distribution systems.

We also want to explore how costs for interconnections are allocated among projects and ensure that all projects, both large and small, have access to the grid at a fair cost, as well as interconnection request processing timeframes. We discussed this topic in Public Conference 40 and want to continue exploring it in this proceeding.

In this proceeding, we will consider the following possible actions:

1. Completing a rulemaking applying residential solar interconnection standards statewide to ensure that the interconnect process is timely, electronic and customer-friendly, using Condition 16 of the Exelon-PHI merger decision<sup>19</sup> as the starting point of discussions;

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<sup>18</sup> See PC44 Docket No. 55, PHI Slide Presentation at 4.

<sup>19</sup> See Order 86990, Case No. 9361 at A-20 through A-23 (Condition 16).

2. Exploring whether it should be required or encouraged that each newly interconnected solar generating system connect to the electric grid with a smart inverter;
3. Ensuring that the interconnection application process for non-residential solar projects is timely, electronic and customer-friendly;
4. Developing a specified plan and timeline for each utility to publish feasible and useful hosting capacity maps similar to those produced by PHI in its December 9, 2016 comments; and
5. Reviewing whether cost allocation and system capacity issues regarding interconnection of large and mid-size solar facilities that use a significant amount of a distribution system component's remaining capacity restrict other projects from grid access or unfairly burden them with system upgrade costs.

Interconnection Process workgroup leader: Jon Kucskar, Senior Commission Advisor  
(Jon.Kucskar@maryland.gov)

## **5. Energy Storage**

In both this proceeding and Public Conference 40, we received numerous comments citing the vast potential of energy storage to benefit Maryland's electric distribution systems. Many different types of assets can be labeled as energy storage, and energy storage's numerous potential value streams cut across the traditional classifications of generation, transmission and distribution. Furthermore, for most situations, energy storage technology has not yet reached the point of cost-competitiveness with other alternatives. Nonetheless, we want to learn more about energy storage and specifically explore considerations for energy storage as a resource for individual customers and as a distribution grid asset.

In this proceeding, we will consider the following possible actions:

1. Completing a rulemaking that defines residential energy storage and how it is interconnected and classified in Commission rules, tariffs and policies; and
2. Considering the appropriate criteria for evaluating whether a utility should invest in energy storage as a distribution grid asset, and if so, how the utility should be compensated.

Energy Storage workgroup leader: Andrew Johnston, Director of Government Relations and Assistant General Counsel (Andrew.Johnston@maryland.gov)

## **6. Distribution System Planning**

We are very interested in learning more about the broad topic of distribution system planning and have already begun pursuing this topic in other forums.<sup>20</sup> This topic was discussed by numerous stakeholders in their comments, and it may hold promise for Maryland ratepayers, utilities and stakeholders to improve the reliability and cost-effectiveness of Maryland's electric distribution systems. More focus on distribution system planning might be needed at some point to seamlessly incorporate larger amounts of distributed energy resources into Maryland's electric distribution systems. Visibility into DERs from system operators can support reliability, and perhaps efficient markets as well. At a more basic level, increased transparency into a utility's system planning process would be valuable for all stakeholders.

PHI's compliance filing provided significant details regarding its distribution system, and we commend them for it. If consultant funding remains after the first RFP is issued, or if an alternative funding source becomes available, we will proceed with further exploration of

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<sup>20</sup> See, e.g. Case Nos. 9406 (BGE rate case) and 9418 (Pepco rate case), requiring those companies to each develop a distribution investment plan within 12 months setting forth, among other things, how smart meters will be utilized to improve the efficiency and effectiveness of the distribution network.

distribution system planning. Whether or not we address it in this proceeding, we note the importance of distribution system planning in modernizing Maryland's electric grid.

In this proceeding, we will consider the following possible actions, subject to adequate consultant funding:

1. Holding a technical conference to learn more about distribution system planning and the components of it that we should focus on; and

2. Following the conference, determining whether we should solicit and procure a study of the selected focus areas.

Distribution System Planning Workgroup Leader: To Be Announced

### **Proposed Timelines**<sup>21</sup>

#### **1. Rate Design**

##### **a. Traditional electric service**

- February – June 2017: develop proposed pilot program(s) for time-varying rates for distribution service for Commission consideration, and also develop plan for ensuring customer options for time-varying rates for generation service
- July 2017 – June 2018: pilot program(s) occur, if approved

##### **b. DER-specific electric service**

- February 2017: direct PHI to issue RFP
- Spring/Summer 2017: study begins
- December 2017: receive final study from contractor

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<sup>21</sup> Timelines in this order are proposed only and may be modified as necessary by the work groups and the Commission.

- January – May 2018: Propose a plan to develop DER-specific pilot program that contains time-varying rate structure

## **2. Electric Vehicles**

- February 2017 – December 2017: develop proposal to adopt current BGE and Pepco's EV tariffs in other utility territories; develop a proposal to allow retail choice for an EV tariff with time-varying rates; consider additional rate structures for customers with EVs; develop a proposal for limited utility investment in charging infrastructure; and develop appropriate strategies and partnerships with state agencies and others
- January 2018 – June 2018: consider new rate structures for EV corporate fleets and workplace & commercial EVSE

## **3. Competitive Markets and Customer Choice**

- February 2017 – June 2017: develop a proposal that enables utilities that have deployed AMI to begin instituting a data-sharing system
- July 2017 – December 2017: propose changes to the retail supply market (and the appropriate mechanism for implementation) that will improve competition, transparency and the customer experience

## **4. Interconnection Standards**

- February 2017 – July 2017: assess pros and cons of current interconnection process for residential solar; and also whether each newly interconnected solar generating system should be required or encouraged to connect to the electric grid with a smart inverter

- August 2017 – March 2018: develop proposed regulations for Commission consideration instituting best practices of residential interconnection process and, if appropriate, a requirement that newly interconnected solar generating systems connect with a smart inverter
- July 2017 – June 2018: assess desired hosting capacity information that utilities should provide to the public and develop and propose an actionable and cost-effective plan for implementation
- July 2017 – June 2018: review cost allocation and system capacity issues regarding interconnection of large and mid-size solar facilities using a significant amount of a distribution system component's remaining capacity

## **5. Energy Storage**

- May 2017 – June 2018: develop proposed regulations for Commission consideration defining and classifying residential energy storage and addressing related issues, if appropriate
- May 2017 – June 2018: develop proposals for energy storage as a utility asset on the distribution grid by considering issues such as cost allocation and utility cost recovery for investing in non-wires alternatives

## **Conclusion**

Anyone who wants to join a workgroup should email the designated workgroup leader.



Please direct any questions about the proceeding to Jon Kucskar, Senior Commission Advisor, at  
Jon.Kucskar@maryland.gov.

By Direction of the Commission,

*/s/ David J. Collins*

David J. Collins  
Executive Secretary