



Montgomery County Council

From the Office of Councilmember Roger Berliner

March 5, 2013

Contact: 240-777-7828

Councilmember Berliner Asks Public Service Commission to Incorporate Utility 2.0 into Reliability Improvements

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ROCKVILLE, Md., March 5, 2013— In a formal pleading filed today, Montgomery County Councilmember Roger Berliner has called on the Maryland Public Service Commission to broaden its ongoing effort to improve reliability by leveraging the investments to be made by Pepco into a technologically advanced, sustainable, more reliable, and consumer driven model of power distribution sometimes referred to as “Utility 2.0.”

“The Commission is now aggressively pursuing significant improvements in reliability, and Montgomery County residents will be better served as a result. However, the Commission needs to leverage and integrate the substantial investment that will be made on reliability improvements into a reinvented, radically different kind of distribution system suitable for the 21st century,” said Councilmember Berliner, Chair of the Council’s Transportation, Infrastructure, Energy, and Environment Committee.

“Our current grid is not only an unreliable relic of the past, it is wasteful, environmentally harmful, and economically draining. We need a new system that would make Steve Jobs proud. That will require bold changes in the conservative culture of utilities and regulators alike. The technology exists. It is the institutional barriers that must be overcome to put consumers in control and to create a much more reliable, cleaner, and energy efficient grid,” said Councilmember Berliner.

Microgrids are at the heart of the reinvented grid. Councilmember Berliner recently toured the FDA’s microgrid, which has virtually never lost power due to weather,

produces less carbon emissions, is more efficient, and generates net revenues for the government by selling power into the grid. Critical elements of Utility 2.0 also include major infrastructure upgrades such as smart switches and undergrounding; distributed clean energy like solar and biogas; smart meters and other home automation tools that reduce energy use; and dynamic pricing, which allows customers to respond to real time price signals and fosters continued innovation.

“The Governor’s Reliability Task Force and the forthcoming pilot projects/ recommendations of the Energy Future Coalition are critical building blocks toward the future our state and county deserve. It is now up to the Commission to make sure that we realize the full potential of what Utility 2.0 has to offer,” concluded Councilmember Berliner.

A copy of the Councilmember’s formal pleading is attached.

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Petition to Open Investigation
Into Utility 2.0 –
The Future of Maryland’s Grid

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BEFORE THE
PUBLIC SERVICE COMMISSION
OF MARYLAND

CASE NO. _____

**PETITION TO OPEN INVESTIGATION INTO
UTILITY 2.0 – THE FUTURE OF MARYLAND’S GRID**

The Honorable Roger Berliner
Montgomery County Council
Chair, Transportation, Infrastructure
Energy & Environment Committee
100 Maryland Avenue
Rockville, MD 20850

Dated: March 5, 2013

Petitioner¹ begins by commending the Commission for its increased appreciation of the “significant and unsatisfactory disconnect ...between the public’s expectations of distribution system reliability and the ability of the present-day electric distribution system to meet those expectations.”² The comprehensive scope of Order No. 85385 and its directives provide Pepco ratepayers in particular with greater hope that our reliability nightmare may be coming to an end sooner rather than later.

In addition to requiring the utilities to file short term and longer term plans that would bring about higher levels of reliability faster, improve communications, insist upon meaningful estimates for when restoration will actually occur, and make sure that our most vulnerable populations are known, the Commission also wisely directed staff to prepare stronger measures for poorly performing feeders, expand the scope of the current reliability standards to include utility performances in the aftermath of major storms, and to evaluate and report back on “*performance-based ratemaking ...that would more directly and transparently align reliable service with the Companies’ distribution rates granted, and that reduce returns or otherwise penalize sub-standard performance.*” Order at fn. 39, p. 18. The public seeks precisely this combination -- stronger standards met faster with real accountability.

At the same time, the Commission’s order underscores the urgent need for the *broader* but related³ inquiry Petitioner seeks herein – an inquiry into “Utility 2.0 -- The Future of Maryland’s Grid”, and for this broader inquiry to be consolidated with the proceedings that flow from Order No. 85385. As the Commission obviously appreciates, reliability enhancements throughout the state will cost billions of dollars, dollars that will be paid for by ratepayers. Pepco for one has stated that the enhancements it contemplates will cost approximately \$1 billion. The magnitude of these *public investments* alone requires that the Commission ensure

¹ This petition, and the views expressed herein, are solely the responsibility of the petitioner, and do not purport to reflect the views of petitioner’s colleagues on the County Council or the County Executive.

² Case No 9298, *In the Matter of the Electric Service Interruptions in the State of Maryland Due to the June 29, 2012 Derecho Storm*, Order No. 85385, February 27, 2013, p. 3.

³ While Order No. 85385 requires the utilities to comment on the Task Force Report, which includes Recommendation 11 therein related to “Utility 2.0”, Petitioner submits that a broader investigation by this Commission, one that is consolidated with Case No 9298, is a more appropriate means by which this Commission can take ownership of the myriad regulatory, financial, and technological issues that must be addressed if the state and our county are to achieve the benefits realizable only through a transformation of the grid.

that they will help bring about a radically different kind of distribution system – a system that some have labeled “Utility 2.0”.

There should be little debate over the fact that we need a very different kind of utility service. Our current system was born of a different era. Not only is the infrastructure antiquated, the utility paradigm itself is antiquated. Both the business model and the regulatory structure are sorely out of date. In an era of smart phones, we have the equivalent of the old, black rotary phone. It is sometimes said that if Alexander Graham Bell came back in time, he would have a hard time recognizing a phone. Not so with Thomas Edison -- it would look all too familiar.

Some systems age gracefully so that age itself isn't a fundamental problem. However, our utility system is not only old, but it doesn't come close to producing the results we should demand of our distribution grid in 2013. Instead, it is extraordinarily wasteful, rigid, environmentally degrading, vulnerable, and economically draining. And while the precise path forward may be debatable, there is enough real world experience both here at home and abroad to have confidence that a different and far more satisfying future can be ours. We can, and we should, have a system that allows for the innovations that entrepreneurs unleash using the grid as a portal -- a decentralized, less vulnerable system; more reliant on distributed generation and renewables; more efficient; less carbon emitting; and very consumer directed.

Good minds have been working on this issue intensely for a number of years now. Petitioner attaches hereto as exhibit 1 a copy of the Perfect Power Institute's March 2012 document, *“Investing in Grid Modernization, The Business Case for Empowering Consumers, Communities and Utilities.”* Therein the authors, including a respected former utility executive, argue for a system that includes, but is not limited to:⁴

- Infrastructure upgrades focusing on local substation automation, circuit looping, smart switches, and undergrounding;
- Distributed clean energy such as solar, biogas, electricity storage, and gas fired cogeneration;

⁴ *Investing in Grid Modernization: The Business Case for Empowering Consumers, Communities and Utilities.* Perfect Power Institute, March 2012, pgs. 20-34.

- Smart meters and a basic home automation package that includes web-enabled energy management tools with the capacity to reduce loads;
- Dynamic pricing that allows consumers to respond to real time price signals and unleashes innovation;
- A market where residential, commercial, and industrial customers can also become electricity suppliers and sellers of ancillary services such as demand response, day-ahead markets, capacity markets, and power quality services.

At the heart of such a system is a series of micro-grids: “the system architecture that achieves smart grid benefits and value most cost-effectively...is the smart microgrid.”⁵ Petitioner recently toured the Food & Drug Administration’s micro-grid in Silver Spring. Constructed and run by Honeywell under an energy services performance contract, that microgrid system has achieved 99.999 percent reliability over the past 12 months. Operations have not been interrupted by weather. Not once. In addition, the system is more energy efficient, produces less carbon, and generates net revenue. While the FDA microgrid does include solar, gas-fired cogeneration is at the core of this, and many other, microgrids. Clearly, the FDA campus is large, but microgrids are scalable. Several months ago Petitioner hosted a forum for large Montgomery County developers to introduce them to the business case for providing their commercial and residential tenants cleaner and more reliable power through microgrids and gas-fired cogeneration. And microgrids can be scaled for residential neighborhoods and communities.

Naperville, Illinois, a Chicago suburb, is one example of community that decided it had had enough of unreliable power and chose to pursue a more perfect power model. As a result, it now is “one of the most reliable suburban grids in the country.”⁶ Thomas Friedman wrote this past fall about the investment Chattanooga, Tennessee made in its grid such that when an unusual storm that knocked out power to 80,000 homes, the intelligent power switching on the fiber network meant that “ ‘42,000 homes had their electricity restored in ... 2 seconds.’ Old

⁵ *The Value of Smart Distribution and Microgrids*, Perfecting Power for Secure, Sustainable Energy Future, a Galvin Electricity Initiative, p. 4.

⁶ *Investing in Grid Modernization*, p. 41.

days: 17 hours.”⁷ And by integrating the utility and telecommunications worlds, Chattanooga has become a mecca for smart new companies.

This could be our future. A future in which there is a 3-1 return on investment; greatly enhanced reliability; a 30% reduction in emissions; a 10% reduction in energy consumption; a 10% reduction in needed infrastructure improvement costs; improved generation efficiencies; reduced distribution losses; reduced operating costs; and the list goes on ...and on.⁸ And none of those considerable benefits include the broader economic and competitive benefits to the state by encouraging a whole new generation of clean, green tech investments in our state.

A variant of this future is expected to be unveiled sometime this month when the Energy Future Coalition releases its recommendations for two pilot projects -- one in Pepco’s service territory and one in BG&E’s service territory.⁹ These recommendations are the result of the request by the Governor’s Reliability Task Force, which asked the Energy Future Coalition to do this groundbreaking work. As the Task Force noted:

During the course of the roundtable discussions, there was consensus that the utility industry was transforming at a pace unseen in its history. Between the breakthroughs in technology regarding the delivery of energy, the analytics involved in evaluating the usage of energy, and the numerous and varied ways to communicate with customers, utilities are constantly reacting and adapting to changing paradigms. Layered on top of these formidable challenges are significant policy goals, including the increase of renewable energy sources, the reduction of energy usage, and the decrease in greenhouse gas emissions, that require additional adaptation from the utilities.

The new reality facing the utility industry is that they must perform in an environment rife with change, pressure, and demands that far exceed their traditional scope of expertise and past consumer expectations. The Task Force concurs with the analysis offered by the Energy Future Coalition, that ***this is a transformative time in Maryland’s energy future, and that big, bold thinking is required*** (emphasis added).

The Task Force is also cognizant of its recommendations regarding changes to the cost recovery model. Specifically, by modifying the incentives for utilities, i.e., offering benefits if they exceed reliability metrics and promising penalties if they fail to meet them, the group has already embraced a review of the traditional regulatory construct.

⁷ Thomas Friedman, *Obama’s Moment*, New York Times, November 20, 2012

⁸ *Investing in Grid Modernization*, pgs. 25-36.

⁹ Petitioner is not endorsing the specifics of the Energy Future Coalition’s recommendations, recommendations which the Petitioner, like the public generally, has not seen yet.

Therefore, we are intrigued by the vision that the Energy Future Coalition has posited; that by rewarding performance, consumers will receive better performance.

The Task Force thought seriously about the recommendations proposed by the Energy Future Coalition to use a pilot approach to transition the electric utility industry into a new, “Utility 2.0” model. While the proposal was too vague for the Task Force to embrace it at this time, it appreciates the progressive thinking of the Coalition and is interested in learning more about the potential of a pilot program in Maryland to explore how to best enable utilities to meet the myriad challenges that are awaiting them.¹⁰

Clearly, this is important work, and while Petitioner urged the Task Force to help launch this initiative,¹¹ in the end, it is work that -- at its heart -- must become the work of this Commission.

As the Task Force recognizes, there are “myriad challenges” confronting both the industry and regulators – challenges that go beyond reliability *per se*. Reliability should be addressed aggressively, as this Commission appears poised to do, in that larger context, the context of reinventing the distribution system for the 21st century. Upon the release of the Energy Future Coalition’s recommendations, Petitioner requests that the Commission launch its own investigation into “Utility 2.0 – The Future of Maryland’s Grid.”¹² Such an investigation should invite the broader community and stakeholders to share their vision of Utility 2.0; the success of other communities and countries in achieving more perfect power; the regulatory barriers and the utility company risks and rewards; as well as comments on the specific proposals/pilots recommended by the Energy Future Coalition. This investigation should be integrated into the urgent work of this Commission on improving reliability quickly. As noted, the investments contemplated to achieve such improvements are quite significant. These are public investments that should be guided by the public’s instrument to achieve the larger and highest public end. And that public instrument is this Commission.

¹⁰ “Weathering the Storm”, Report of the Grid Resiliency Task Force, September 24, 2012, Recommendation 11 at p. 89.

¹¹ Testimony of Montgomery County Council President Roger Berliner in response to Governor Martin O’Malley’s Executive Order to study ways to strengthen Maryland’s electric distribution system. August 21, 2012, p. 5.

¹² The Montgomery County Council’s Transportation, Infrastructure, Energy & Environment Committee held a hearing on “Utility 2.0 – Perfect Power for Montgomery County” on October 25, 2012 that Commission staff attended. Witnesses included representatives of the Energy Future Coalition, the Perfect Power Institute, and a former state regulatory commissioner.

The proponents of Utility 2.0 and Perfect Power have articulated the challenge in the following manner:

“America is ... at a critical inflection point, a metaphorical 1776 of energy. We can choose to maintain the grid as it now exists and is regulated, a course favored by most incumbent monopoly stakeholders who are as figuratively entrenched in law and society as was the British monarchy of the 1700s. Or ... we can reinvent the system to best serve the needs of consumers.

The nation, in fact, has an unprecedented opportunity to create a 21st century grid that operates far more intelligently, reliably, efficiently and cost-effectively. It would stimulate the economy and expedite the development of clean energy while reducing the need for new conventional power plants. Most important, it would give consumers ultimate control over their electricity use and cost. It is a revolution that would compel utilities to evolve, to focus more on consumer needs and service quality.”¹³

This is a future our state and my county richly deserve. And we need you, our public service commission, to lead us “*boldly*” there following on the work of the Governor’s Task Force Report and the Energy Future Coalition. For the reality is that the challenges we face are not technological. While we do need breakthroughs in storage, the rest is virtually off the shelf. The real challenges are institutional – the fundamental conservative nature of investor owned utilities combined with and a regulatory system that is generally reactive, rather than proactive, and one that neither encourages nor rewards innovation. This is not an indictment of this Commission or our investor owned utilities – this is true across the country.

This is precisely why there will be so much national attention on the fate of the Energy Future Coalition’s recommendations,¹⁴ and more broadly, whether Maryland is prepared to lead the nation in this quest for a “transformative” 21st century distribution system. Together, with your staff, we have the potential to map a future that will enhance our quality of life, our economy, and our environment. Our state and our county deserve nothing less.

¹³ *An Electric Revolution, Reforming Monopolies, Reinventing the Grid and Giving Power to the People*, Galvin Electricity Initiative, Jay Stuller, p. 7.

¹⁴ This effort has already garnered the attention of the highest levels of the U.S. Department of Energy. Petitioner joined with representatives of the Energy Future Coalition in a briefing for and wide ranging discussion with Assistant Secretary Patricia Hoffman and senior staff on Utility 2.0.

Respectfully submitted,



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