

**BEFORE THE STATE CORPORATION COMMISSION  
OF THE COMMONWEALTH OF VIRGINIA**

In the matter of determining a recommended mix of programs, including demand side management (DSM), conservation, energy efficiency, load management, real time pricing, and consumer education, to be implemented in the Commonwealth to cost-effectively achieve the energy policy goals set in §67-102 of the Code of Virginia to reduce electric energy consumption.

CASE NO. PUE-2007-0004

EnerNOC, Inc. (“EnerNOC”), a national demand response solutions provider, respectfully submits the following comments in the above-referenced proceeding pursuant to the June 13, 2007 Commission Staff letter to Market Participants.

**I. Introduction to EnerNOC**

EnerNOC is a leading developer and provider of demand response solutions in the United States. EnerNOC currently manages over 790 MW of demand response capacity at over 1,650 commercial, institutional and industrial customer end-user sites. We are active in organized wholesale RTO/ISO market regions of the United States, including the PJM Interconnection. We also have bilateral contracts elsewhere throughout the United States to provide demand response capacity directly to utilities.

EnerNOC deploys technology that enables automated customer demand response as a reliable and cost-effective means of reducing peak electric energy consumption. The “NOC” in EnerNOC stands for Network Operations Center. Our award-winning NOC technology enables us to network customer facilities across the United States, automate and aggregate demand response capacity, and provide this capacity to grid operators and utilities during periods of high prices, peak demand, or other system contingencies.

EnerNOC performs individualized audits at end-user facilities to identify demand response opportunities. Once the audit is complete, EnerNOC installs, programs, and tests communications and relay technology equipment. This enables our NOC operators to remotely monitor and manage customer demand resources (e.g., lights, HVAC, back up generators) in real-time, 24 hours a day, seven days a week. When a demand response event is called by a utility or grid operator, EnerNOC initiates a series of pre-determined and pre-tested protocols to reliably dispatch each customer’s demand response capacity in a systematic fashion.

Our technological and operational expertise and experience make demand response a viable, cost-effective grid management tool that attracts broad-based customer support.

## II. The Potential for Demand Response in the Commonwealth

EnerNOC commends the Commonwealth of Virginia and the State Corporation Commission (“SCC”) for demonstrating initiative and leadership in the areas of demand response and energy efficiency. Our analysis shows that there are tremendous opportunities in Virginia, particularly in Northern Virginia, to utilize demand response to improve the efficiency and reliability of the electric power system and reduce costs to Virginia’s electric customers.

Northern Virginia has imminent capacity needs due to rapid population and economic growth in the region – an indicator for the strength of the State and its need to invest in technologies and solutions that help the burgeoning economy. The population growth in the Commonwealth, particularly in Northern Virginia, has been extraordinary. Between 2000 and 2005, Virginia’s population grew faster than all but six states in the nation. Sixty percent of that growth occurred in Northern Virginia. Loudoun County alone grew nearly 50% in population during this period.<sup>1</sup>

The PJM Interconnection has cited the Dominion zone as having the fastest growing demand for electricity at peak times among any of the PJM zones across PJM’s fourteen state footprint.<sup>2</sup> Furthermore, electrical demand in Northern Virginia has grown by about 40 percent over the last decade, and is projected to grow by another 8 percent by 2011.

Dominion Virginia Power’s peak demand in Northern Virginia is substantial — approximately 6,700 MW and growing rapidly. Based on EnerNOC’s experience in other regions with comparable geographic and demographic characteristics as Virginia, five to 10 percent of Virginia’s peak demand can be served through effective deployment of commercial, institutional, and industrial demand side resources. That is, EnerNOC estimates that between 350 and 700 MW of peak load in Dominion Virginia Power’s service territory could be met by demand response.

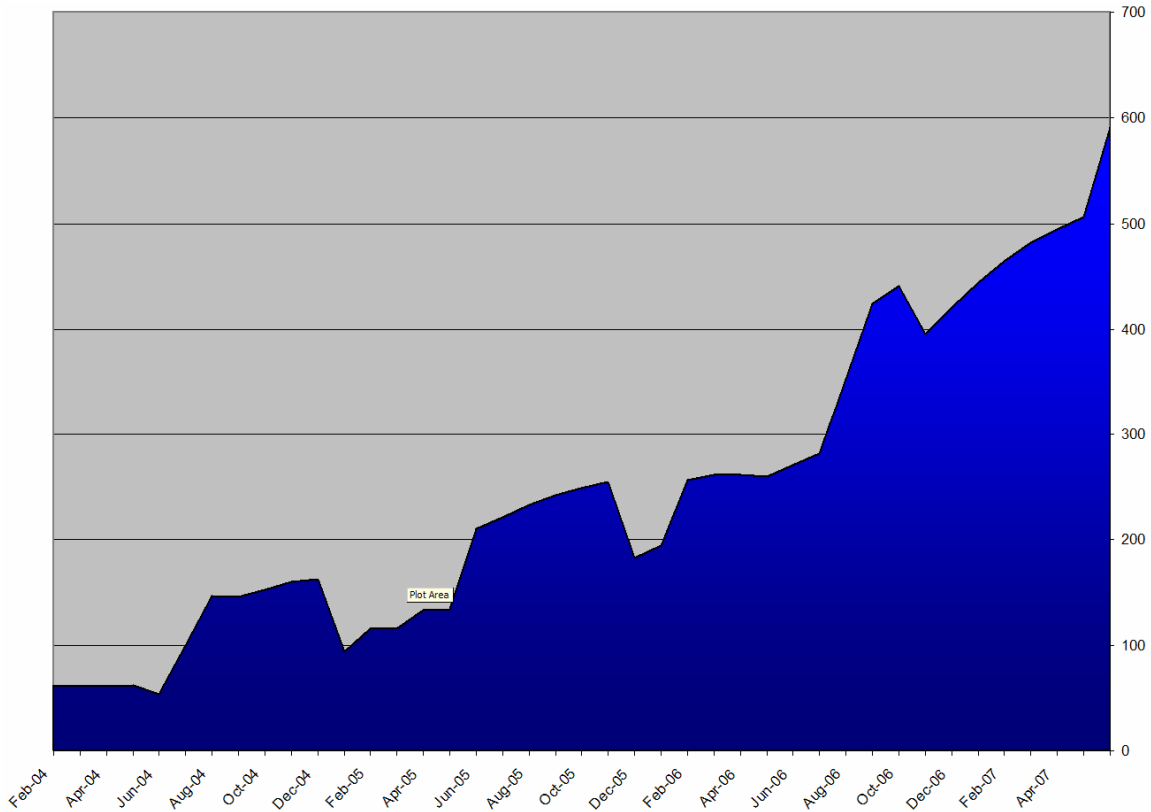
The demand response experience in Connecticut sheds light on the demand response potential for the Commonwealth. Currently, over 590 MW of demand response capacity is enrolled in ISO New England’s 30-Minute Real-Time

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<sup>1</sup> See, The Washington Post “No Signs Of Pause In N.Va. Growth,” 26 January 2006, available at [www.washingtonpost.com/wp-dyn/content/article/2006/01/25/AR2006012502262.html](http://www.washingtonpost.com/wp-dyn/content/article/2006/01/25/AR2006012502262.html) (downloaded 13 July 2007).

<sup>2</sup> See, Dominion press release, “Northern Virginia Power Line Critical to Electric Reliability in Virginia,” 18 January 2007, available at [www.dom.com/news/elec2007/pr0118.jsp](http://www.dom.com/news/elec2007/pr0118.jsp) (downloaded 13 July 2007).

Demand Response Program.<sup>3</sup> This represents 7.9 percent of Connecticut’s 7,479 MW peak demand.<sup>4</sup> In Figure 1, below, we show demand response growth in Connecticut from 2004 to June 2007, following the adoption of policies for promoting the deployment of demand response. A similar trend is possible in Virginia, and we hope to work with the SCC and other stakeholders toward engaging end-user customers in demand response programs.



**Figure 1: Demand Response Growth in Connecticut, February 2004-June 2007**

Summit Blue Consulting, a leading national energy consulting firm, recently released a study examining DSM opportunities in Virginia. The study found that: (1) “A variety of DSM programs that incorporate both energy efficiency (i.e., permanent energy savings) and demand response (i.e., targeted peak demand reduction) goals could be effectively applied in the Commonwealth given Virginia’s current economics and demography;” and (2) “These are characterized

<sup>3</sup> See, PowerPoint Presentation, “ISO New England/NEPOOL Demand Response Working Group Meeting,” 6 June 2007, available at [www.iso-ne.com/committees/comm\\_wkgrps/mrks\\_comm/dr\\_wkgrp/mtrls/2007/jun62007/intro\\_dr\\_working\\_group\\_meeting\\_06\\_06\\_2007.ppt](http://www.iso-ne.com/committees/comm_wkgrps/mrks_comm/dr_wkgrp/mtrls/2007/jun62007/intro_dr_working_group_meeting_06_06_2007.ppt) (downloaded 10 June 2007).

<sup>4</sup> See, Connecticut Light & Power Press Release, “Connecticut Sets another Electric Usage Record,” 4 August 2006, available at [www.cl-p.com/companyinfo/newsreleases.asp](http://www.cl-p.com/companyinfo/newsreleases.asp) (downloaded 17 March 2007).

by population and economic growth, a large concentration of commercial data centers, and significant public sector facilities.”

Most strikingly, the Summit Blue study suggested substantial peak reductions from 2007 figures. Summit Blue reported that:

“...Results from the current assessment suggest that a well-designed portfolio of DSM program offerings including both energy efficiency and demand response strategies could cost effectively reduce the Commonwealth's peak demand by approximately 5,000 MW and its energy consumption forecasts by 7,800 GWh over a ten-year planning horizon. These estimates represent nearly **17% of the Commonwealth's projected 2007 peak demand** and nearly 10% of the Commonwealth's projected 2007 energy use. [Emphasis added]”<sup>5</sup>

Of the 5,000 MW of peak demand reduction potential, Summit Blue estimated that 44 percent, or about 2,200 MW, of cumulative peak reduction by 2017 could be achieved by demand response.

EnerNOC offers its substantial experience in other regions throughout the United States to help shape the policy recommendations in the SCC's December 2007 report in order to find solutions for reducing Virginia's electricity consumption by 10 percent by year 2022. The State's goals are ambitious but entirely feasible. We submit that dispatchable commercial, industrial and institutional demand response programs are a proven means to reduce the Commonwealth's peak demand.

In January of 2007, another leading consultancy, The Brattle Group, published a landmark study investigating and confirming the financial benefits of demand response resources.

The Brattle Group study entailed a cost-benefit analysis of a three percent reduction of peak demand, via demand response, among participants of the Mid-Atlantic Demand Response Initiative, a subset of states within the PJM Interconnection. The study demonstrated, via a simulation of market performance, that:

“Assuming all loads (i.e., customers or their retail providers) are exposed to spot prices, the estimated price reductions could benefit non-curtailed loads in MADRI states by \$57-\$182 million per year. The potential benefits to the entire PJM system amount to \$65-\$203 million per year.”<sup>6</sup>

<sup>5</sup> See, Summit Blue Consulting Energy Conservation Study, commissioned by PECVA, 16 May 2007, available at [www.pecva.org/downloads/powerlines/documents/pec/Summit\\_Blue\\_Report.pdf](http://www.pecva.org/downloads/powerlines/documents/pec/Summit_Blue_Report.pdf) (downloaded 13 July 2007).

<sup>6</sup> See, The Brattle Group, “Quantifying Demand Response Benefits in PJM,” 29 January 2007, available at [www.energetics.com/madri/pdfs/BrattleGroupReport.pdf](http://www.energetics.com/madri/pdfs/BrattleGroupReport.pdf) (downloaded 13 July 2007).

While the current costs of energy and capacity are generally lower in Virginia today than the MADRI states, we submit that all electric customers in the Commonwealth of Virginia would receive substantial financial savings from a committed approach to demand response solutions.

Taking another step back, in March 2007, Summit Blue Consulting released a report that evaluated the benefits of demand response nationwide. This report took into account several key factors that have relevance both to Virginia and the United States at large: fuel prices, peak demand, energy demand, unit outages, and tie line capacities. As in the Brattle Group study, real-world data was modeled in a simulation to estimate the net 20-year costs and benefits of demand response solutions.

The identified benefits are substantial. One of the most compelling results of this study was a forecast of the total *capacity charge* savings from demand response. The Summit Blue Consulting study found that “. . . [a] substantial percentage of new capacity charges were deferred by the model because of the [demand response resource] availability. This amounted to savings of \$892 million (2004 dollars) over the 20-year period.”<sup>7</sup> Furthermore, the study demonstrated that a demand response solution, coupled closely with a standard real time pricing program resulted in \$1.98 billion in the system cost savings (average net present value) over 20 years.

By committing to reduce peak demand, the Commonwealth of Virginia has taken a leap forward in lowering energy costs for ratepayers, reducing emissions, and ensuring a more reliable and efficient power grid. As EnerNOC has discussed in these comments, the benefits of demand response solutions are clear, available, timely, and cost-effective. We recommend a continued, long-term effort to make these solutions a reality in the Commonwealth.

### **III. Recommendations**

#### ***A. Consider linkages between demand response, energy efficiency, and advanced metering infrastructure.***

In developing an energy strategy for Virginia’s future focused upon energy efficiency and conservation, EnerNOC urges the SCC to consider the interdependency of the three oft-cited elements of demand side management: demand response, energy efficiency, and advanced metering infrastructure. For example, demand response can drive the adoption of advanced meters and provide a mechanism to fund the installation of these meters. The continuous stream of

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<sup>7</sup> See, Summit Blue Consulting, “Demand Response Resources (DRR) Valuation And Market Analysis: Assessing DRR Benefits and Costs,” March 2007, available at [www.summitblue.com/dyn\\_downloads/drrvaluationandmarketanalysis.pdf](http://www.summitblue.com/dyn_downloads/drrvaluationandmarketanalysis.pdf) (downloaded 13 July 2007)

customer usage data from advanced meters, in turn, allows the customer or a third party energy manager to identify customer usage patterns and pursue further energy savings and efficiency opportunities.

From a market efficiency standpoint, demand response, energy efficiency and advanced metering infrastructure are all linked and interdependent. Energy efficiency reduces the need to run base load generators, primarily fueled by coal. Demand response, on the other hand, is generally dispatched at peak consumption periods and helps to flatten system peaks and increase the load factor of the system. This simultaneously reduces the need to operate some of the least efficient and most highly polluting peaking resources on the system and at the same time allows the most efficient and cleanest combined cycle facilities to operate most efficiently. Advanced metering infrastructure provides the critical platform for commerce in demand side programs, which bring about these marketplace improvements.

***B. Leverage demand response through third party aggregation and competitively neutral business rules.***

Demand response providers, also known as curtailment service providers, have developed into a mature segment of the electric power industry. Any initiatives Virginia adopts to promote demand response should leverage the expertise of demand response providers and not place demand response providers at a competitive disadvantage to utilities. In fact, demand response providers can work hand-in-hand with utilities towards achieving active customer participation.

EnerNOC strongly believes that without demand response providers actively enrolling customers in Virginia, the Commonwealth's demand response programs will see only marginal success. Demand response providers have proven quite effective and innovative in promoting customer awareness and participation in demand response programs. EnerNOC and its competitors in the demand response sector have built technology to automate and aggregate the demand reduction capabilities of large numbers of customers. Demand response providers and utilities together can achieve a much more cost effective and greater level of demand side market penetration than utilities can achieve alone.

Demand side programs in Virginia should not be limited to utility sponsored programs. EnerNOC believes that every demand side management services market should be open to third party demand response providers, which have specialized expertise in working with end use customers and utilities.

This is not to say that utilities should be prohibited from providing demand side services directly to their customers. However, to the extent utilities participate directly in demand side programs together with third party demand response providers, it is essential that business rules remain competitively neutral. For example, utilities should not be permitted to gain an unfair advantage over third

parties through bundling demand side offerings with other utility offerings, or excluding non-utility enrolled demand side program customers from participation in utility offerings. Third party demand response providers also need direct access to customer metering data, and to the full functional capability of meters. Utilities should not be permitted to restrict access to customer information or otherwise serve as a gatekeeper for the flow of information.

***C. Cost recovery should be allowed to utilities and third parties to promote cost effective demand side programs and investments.***

EnerNOC believes that properly designed demand side programs provide tangible and intangible benefits to customers that far outweigh demand side management program costs, including capital investments and the operating costs. Accordingly, regulators should allow cost recovery for cost-effective demand side programs. EnerNOC supports the concept of appropriate cost recovery for demand side management programs and investments.

Respectfully Submitted,

/s/ Ken Schisler

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