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June 29, 2012

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

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PA PUC
SECRETARY'S BUREAU

Re: Docket No. M-2012-2300653/M-2009-2108601 – Implementation of Act 129 of 2008 – Total Resource Cost (TRC) Test – 2012 Phase II of Act 129

Dear Secretary Chiavetta:

Enclosed herewith please find the original and three (3) copies of the “**Comments on Behalf of EnerNOC, Inc. in Response to the Act 129 Phase II TRC Test Tentative Order**” in the above-captioned proceeding. Please enter this into the docket and timestamp the additional two (2) copies.

Should you have any questions, please do not hesitate to contact me at (717) 237-6716.

Sincerely,

RHOADS & SINON LLP

By: 
Scott H. DeBroff, Esq.
Alicia R. Duke, Esq.
Counsel for EnerNOC, Inc.

Enclosures

cc: Laura Fusare Edinger at ledinger@pa.gov
Louise Fink Smith at finksmith@pa.gov

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION

IMPLEMENTATION OF ACT 129 OF
2008 – TOTAL RESOURCE COST
(TRC) TEST – 2012 PHASE II OF ACT
129

Docket No. M-2012-2300653
Docket No. M-2009-2108601

COMMENTS ON BEHALF OF ENERNOC, INC. IN RESPONSE
TO THE ACT 129 PHASE II TRC TEST TENTATIVE ORDER

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Dated: June 29, 2012

Counsel for EnerNOC, Inc.

**COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**IMPLEMENTATION OF ACT 129 OF
2008 – TOTAL RESOURCE COST
(TRC) TEST – 2012 PHASE II OF ACT
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**COMMENTS ON BEHALF OF ENERNOC, INC. IN RESPONSE
TO THE ACT 129 PHASE II TRC TEST TENTATIVE ORDER**

AND NOW COMES, **EnerNOC, Inc** (“EnerNOC”) by and through its counsel, **Scott H. DeBroff, Esquire** and **Alicia R. Duke, Esquire** of Rhoads & Sinon LLP, for the purpose of these "Comments" with respect to this proceeding before the Commonwealth of Pennsylvania Public Utility Commission ("PUC" or the "Commission") pursuant to 52 Pa. Code §§ 5.71-5.74. In support of this docket, EnerNOC avers the following:

1. EnerNOC is a leading provider of clean and intelligent energy management applications and services for the smart grid, which include comprehensive demand response and energy efficiency applications and services. EnerNOC manages a demand response (DR) portfolio of over 8,000 MW from over 5,300 commercial, institutional, and industrial end-use customers across more than 12,500 sites. EnerNOC actively participates in a range of capacity, energy, and ancillary services markets, and is an active Aggregator of Retail Customers (ARC) in the demand response programs of ISO New England, the New York ISO, ERCOT and PJM. In addition, EnerNOC partners with utilities both inside ISO/RTO regions and in traditionally

regulated utility territories to provide cost-effective and reliable demand-side management services to utilities and their customers.

2. EnerNOC operates specifically in the Commonwealth of Pennsylvania as a Conservation Services Provider (CSP). As a CSP, EnerNOC provides commercial, industrial and institutional organizations with demand response and energy efficiency services. By letter dated July 2, 2009, the PUC approved EnerNOC's Application to register as an Act 129 Conservation Services Provider.

3. EnerNOC has participated in the other related Act 129 proceedings before this Commission. EnerNOC participated as a party in all of the Energy Efficiency and Conservation (EE&C) Plan proceedings for each Pennsylvania investor owned utility.

4. On May 25, 2012, a Tentative Order was entered in this proceeding seeking comments on the proposed PA TRC Test for Phase II. The Tentative Order represents the Commission's efforts to establish a comprehensive TRC Test with the purpose of evaluating the EE&C Programs pursuant to Act 129.

5. On June 9, 2012, the Tentative Order was published in the PA Bulletin.

6. EnerNOC would like to submit the following Comments in response to the Tentative Order.

7. EnerNOC's counsel and parties to whom all correspondence and pleadings in this docket should be directed to are:

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COMMENTS TO THE PROPOSED 2012 PA TRC TEST FOR PHASE II

I. Introduction

EnerNOC respectfully submits these Comments in response to the Commission's Draft Order in the above-referenced dockets. EnerNOC applauds the Commission for developing a well-thought out and largely relevant framework for conducting Act 129 Phase Two cost-effectiveness analyses. EnerNOC offers these comments in order to enhance that framework and ensure that all energy efficiency and demand response resources in the Commonwealth will be assessed appropriately as we look to the future.

While the demand-side management (DSM) industry has had long-established cost-effectiveness screening methods and tools to evaluate energy efficiency and legacy load management programs, these tools have not been enhanced to handle the unique features of contemporary demand response programs. As such, there are several elements of the existing Act 129 TRC framework that simply undervalue the contributions made by demand response (DR) programs. As a result of not including these elements, many of the Phase One DR programs considered by EDCs at some point for a Phase Two effort will simply not be cost-effective and thus will be eliminated from further consideration. EnerNOC has identified the following elements of the draft TRC order that should be re-assessed by the Commission prior to finalizing the Order:

- Timeframe consideration for assessing cost-effectiveness of DR programs
- Appropriate accounting of avoided T&D costs in assessing cost-effectiveness of EE&C programs
- Treatment of customer incentives in the TRC calculations of DR programs
- Inclusion of capacity benefits from future PJM auctions

2. Analysis Timeframe

EnerNOC has conducted its own analyses regarding the cost-effectiveness of DR programs in Pennsylvania drawing on data submitted as part of the original EDC Act 129 filings for Phase One. Our analysis was limited to commercial and industrial (C&I) DR programs, since C&I programs are the focus of EnerNOC’s implementation efforts and thus best reflect our knowledge and expertise. In this part of the analysis, we considered the potential continuation of Phase One DR programs through the proposed Phase Two time period of 2013-2015. Table 1 summarizes the results of our analysis.

Table 1: DR Program TRCs with Program Ramp-Up

EDC	Program	2009	2010	2011	2012	2013	2014	2015
PECO	DR Aggregator Contracts	0.00	1.02	0.69	0.84	0.89	0.94	0.99
PPL	Load Curtailment Program	0.00	0.00	0.00	2.37	2.37	2.37	2.37
Duquesne Power and Light	Curtailable Load Program	0.00	3.45	4.70	5.34	5.34	5.34	5.34
West Penn Power	Customer Load Response and Customer Resources DR Program	0.00	0.27	2.42	0.35	0.35	0.35	0.35
Overall		0.00	0.98	0.68	1.23	1.27	1.32	1.37

The results indicate that as DR programs ramp up, they tend to become more cost-effective. As more participants are recruited, fewer implementation costs are incurred due to the normal process of program start-up. While not every EDC shows positive TRC ratios by 2015, the overall trend is indicated by the consolidated TRC analysis for all EDC programs represented in the bottom line of the table. By 2015, all the DR programs taken together hypothetically, are

cost-effective.¹ This result points to the importance of looking at a continuous timeframe when considering DR program cost-effectiveness. From our experience, DR programs tend to incur significant costs at their beginning. These costs are related to developing marketing strategies, recruiting customers, developing program infrastructures such as tracking systems, communications equipment, and the like. Once those systems are in place, DR programs tend to operate for less cost while continuously delivering the benefits associated with the demand savings. As the Commission considers DR program cost-effectiveness for Phase Two (assuming that the DR programs are allowed to continue beyond 2012), the EDCs should be assessing the DR program cost-effectiveness over the entire time horizon of Phases One and Two. This will result in a more favorable TRC results.

3. Inclusion of T&D Avoided Costs

In its comments submitted to the Commission regarding the Act 129 Energy Efficiency and Conservation Program (EE&C) Phase Two Tentative Implementation Order, EnerNOC noted that another benefit to demand response programs that is not currently considered in the Pennsylvania TRC methodology is the avoided cost of new transmission and distribution (T&D) infrastructure.² From our decades-long experience assisting utilities around the world to plan, develop and implement both demand response (DR) and energy efficiency (EE) programs, we have learned that the associated reductions in peak demand resulting from these programs also reduce the need to expand the T&D system. A portion of T&D investment is driven by the need to have enough capability available to move electricity to where it is needed during peak times

¹ Note that EnerNOC recognizes that each program must be assessed individually, however the purpose of the consolidated result is to illustrate the overall trend that DR programs tend to become more cost-effective the longer they are in place.

² EnerNOC June 25, 2012 comments at p. 5.

while maintaining a sufficient level of reliability. Additionally, geographic expansion of the system requires T&D investment, and that is often correlated to growth in peak demand.

EnerNOC reviewed the Act 129 EE&C plan filings from each of the Electric Distribution Companies (EDCs). In no instance did EnerNOC observe that the EDCs appropriately considered the benefits associated with avoided T&D investments for their TRC assessments of DR and EE program cost-effectiveness. EnerNOC believes that this was an incorrect interpretation of the PUC's direction regarding the treatment of T&D costs for the TRC test. Further, exclusion of T&D avoided costs is inconsistent with common industry practice. As a result of excluding T&D avoided costs, EDCs have significantly undercounted the benefits associated with avoided T&D investments as a result of the Act 129 DR and EE programs. This is particularly important for many DR programs which would have been more cost-effective had the EDCs included T&D benefits.

2.1 Application of T&D Avoided Costs in Other Jurisdictions

Table 2 provides several examples of the use of avoided T&D costs for the purposes of DR and EE program cost-effectiveness in other states. When compared to the avoided T&D figures cited in Appendix 1 of the recently-completed market potential study, it is clear that the EDCs have largely ignored the full benefits associated with many of their Act 129 programs, particularly DR programs.³ Only a few EDCs reported *any* avoided T&D values in their Act 129 filings, and for those that did, these values averaged around \$0.12/kW-year, more than an order of magnitude less than the lowest value and other utilities in the U.S. have attributed to DR programs similar in nature (i.e., peak load reduction) to Act 129.⁴

³ GDS Associates, Electric Energy Efficiency Potential for Pennsylvania, May 2012, Appendix 1 Avoided Cost and Model Inputs by EDCs.

⁴ Only MetEd, Penn Power, West Penn, and Pennelec reported avoided T&D costs. The other EDCs did not include T&D avoided costs in their filings.

Table 2: Representative Avoided T&D Costs in Other Jurisdictions

State/Utility	Avoided T&D Cost (\$/kW-year)	Source
Connecticut/CL&P	29.2	Connecticut Light and Power Company, Assessment of Avoided Cost of Transmission and Distribution. October 2009 at p. 1.
Wisconsin/statewide	30.0	Energy Center of Wisconsin, Energy Efficiency and Customer-Sited Renewable Resource Generation in Wisconsin, August 2009 at p. EE-13.
New York/upstate	33.5	New York Public Service Commission, Order Approving "Fast Track" Utility-Administered Electric Energy Efficiency Programs with Modifications, January 2009 (Case # 08-E-1003, et al) at p. 36.
California/SCE	54.6	California Public Utilities Commission, Decision Adopting a Method for Estimating the Cost-Effectiveness of Demand Response Activities, December 2010 (Docket # R07-01-041) at p. 37.
California/SDG&E	74.8	Id.
California/PG&E	76.6	Id.
New York/Con Edison	100.0	New York Public Service Commission, Order Approving "Fast Track" Utility-Administered Electric Energy Efficiency Programs with Modifications, January 2009 (Case # 08-E-1003, et al) at p. 37.

2.2 Cost-Effectiveness Results with T&D Benefits

Based on the data provided in Table 2, EnerNOC conducted an analysis of the cost-effectiveness of each EDC C&I DR program, assuming that a very modest \$30/kW-year is added to the avoided costs to represent the avoided T&D costs.⁵ Table 3 summarizes the results of that assessment. As can be seen, by 2012, three of the four DR programs are clearly cost-effective.

Table 3: TRC Ratios with Avoided T&D Costs

EDC	Program	2009	2010	2011	2012	2013	2014	2015
PECO	DR Aggregator Contracts	0.00	1.42	1.10	1.24	1.28	1.32	1.37
PPL	Load Curtailment Program	0.00	0.00	0.0	3.18	3.12	3.06	3.01
Duquesne Power and Light	Curtailable Load Program	0.00	4.40	5.35	5.84	5.83	5.82	5.81
West Penn Power	Customer Load Response and Customer Resources DR Program	0.00	0.27	3.93	0.94	0.93	0.91	0.90

⁵ There was insufficient data to reproduce the cost-effectiveness results for the FirstEnergy companies.

4. Customer Incentives

According to the current TRC practices, EDCs are required to treat 100% of the DR implementation costs (including customer incentives) as program marketing or participant enablement costs. We believe this is an inappropriate treatment of the costs and is out of line with common industry practice. For example, California allows for 25% of the DR aggregator costs (inclusive of customer incentives) to be considered pass-through or transfer costs and thus not burdened as a cost in the TRC test.⁶ The theory behind this application is that customers incur minimal enablement costs under these programs since the load aggregators typically provide all necessary DR program enablement equipment to the customers without cost.

In our initial comments to the draft implementation order, we conducted a sensitivity assessment where we assumed that some portion of the DR implementation costs would be treated as incentives.⁷ Based on the application of the California data, we have modified our analysis and present the results in Table 4. In the first column, we report the TRC ratios that we had recalculated as part of our initial comments, where 100% of incentives are treated as a cost.⁸ The next column applies the California approach of treating 25% of the customer incentives are considered a transfer payment, and thus are not burdened as a cost in the TRC test. As can be seen, each program becomes significantly more cost effective. The last column applies a greater *percentage of the customer incentive (50%) as a transfer payment. When this change is made, the programs become more cost-effective.* EnerNOC believes that a 50% treatment of the

⁶ California Public Utilities Commission, Decision Adopting a Method for Estimating the Cost-Effectiveness of Demand Response Activities, December 2010 (Docket # R07-01-041).

⁷ EnerNOC April 17, 2012 comments at p. 13.

⁸ EnerNOC has been informed by staff that one reason the Commission assumed that 100% of the incentives are costs is that the fraction of incentives passed on to customers was not known by the EDCs or the Commission. Despite its highly sensitive nature, EnerNOC is willing to submit such data in aggregate form to the Commission on a confidential basis if it will assist the Commission in reaching a determination that CSPs do not retain 100% of the Act 129 incentives for themselves and thus that 100% of incentive payments should not be treated as costs. We believe that many other CSPs would also be willing to do so on a comparable confidential basis.

customer incentives as a transfer payment is appropriate for the DR aggregator programs. Based on our experience, customers incur negligible costs to participate in the DR program. They do not invest in enablement equipment and typically curtail loads that do not affect their production (i.e., building systems such as cooling and lighting and non-essential production equipment), and thus they do not see reductions in their own business revenues of the magnitude assumed in the California estimates. To the extent the amount assumed to be a cost is considered to be the amount retained by the customer as an incentive and treated as a pass-through (as opposed to retained by the CSP and assumed to be a cost,) EnerNOC submits that 25% grossly understates the fraction of incentives passed on to the customer.

Table 4: TRC Ratios under Various Customer Incentive Cost Scenarios

EDC	Program	TRC including 100% of incentive costs	TRC if 25% of incentive cost passed through (CA protocol)	TRC if 50% of incentive cost passed through (EnerNOC proposal)
PECO	DR Aggregator Contracts	0.81	1.06	1.52
PPL	Load Curtailment Program	1.28	1.67	2.43
Duquesne Power and Light	Curtailable Load Program	4.09	4.66	5.41
West Penn Power	Customer Load Response and Customer Resources DR Program	0.55	0.61	0.67
First Energy Companies (MetEd, Penn Power and Penelec)	C/I Large Sector DR Program	Insufficient data to calculate B/C ratio	Insufficient data to calculate B/C ratio	Insufficient data to calculate B/C ratio

5. Future Capacity Benefits from PJM Auctions

In our comments thus far, we have shown that the DR programs will become more cost-effective if two variables are considered appropriately – the use of a multi-year calculation and the categorization of customer incentives. The DR programs also become more cost-effective if the additional benefits associated with reductions in prices to non-participants and savings on

transmission and distribution infrastructure costs are also considered, as we argued in our initial comments on the draft implementation order.⁹ These benefits are at times neglected in TRC calculations because they are difficult to quantify. However, these benefits can be significant.

To quantify the economic benefits to non-participants, we note the capacity price reduction effected by the presence of demand response programs and multiply that difference in price by the total amount of load affected. We used PJM auction information to find prices for the 2013 and 2014 auctions. Scenarios are available in these two years to show what prices would have been by excluding DR. To be conservative, we chose to apply the lower price delta from the 2014 auction scenario analysis. We calculate that for every megawatt (MW) of DR in Pennsylvania for the 2014 auction, the price decreases by \$0.82/MW-year. This is then multiplied by the total load served in Pennsylvania per year to find the total dollar amount saved by customers. The estimated total NPV of benefits accruing to each of the EDCs from lowered capacity costs are presented in Table 5. This evidence is thus far uncontested, but even if parties were to assert a different value, it is a certitude that the value is not the zero value currently attributed.

⁹ Id. at p. 12.

Table 5: NPV of Non-Participant Benefits from Analyzed DR Portfolio

EDC	Program	TRC with original benefits stream	TRC with additional non-participant benefits
PECO	DR Aggregator Contracts	0.81	1.04
PPL	Load Curtailment Program	1.28	1.81
Duquesne Power and Light	Curtailable Load Program	4.09	4.42
West Penn Power	Customer Load Response and Customer Resources DR Program	0.55	1.08
First Energy Companies (MetEd, Penn Power and Penelec)	C/I Large Sector DR Program	Insufficient data to calculate B/C ratio	Insufficient data to calculate B/C ratio

The results in Table 5 clearly illustrate that all DR programs become more cost-effective, and indeed pass the cost-effectiveness threshold, with just this single change to the TRC.

6. Conclusion

EnerNOC appreciates the opportunity to comment on the draft TRC Test requirements for Phase Two of the Energy Efficiency and Conservation Programs. EnerNOC believes that many of the enhancements that it has proposed for assessing the cost-effectiveness of energy efficiency and demand response programs will be beneficial to Pennsylvania electric customers. EnerNOC urges the Commission to adopt the recommendations described in these comments to ensure that all Act 129 programs are assessed on an equitable basis.

As noted in our June 25 comments regarding the Tentative Order, EnerNOC believes that the appropriate consideration of avoided T&D costs alone is sufficient to ensure that even under the existing grossly deficient TRC methodology, that all of the Act 129 programs are cost effective and thus merit continuation as required by Act 129. However, the cumulative

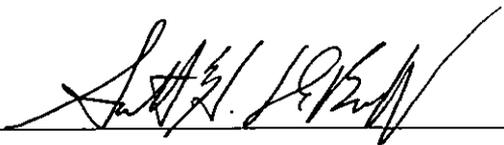
incremental benefits of only some, let alone all, of the factors described herein make it a certainty that even the least cost effective of the EDC peak load reduction programs would be cost effective and therefore worthy of continuation if the deficiencies inherent in the existing TRC were corrected.

The Commission should remedy these deficiencies and in so doing assure itself that the peak load reduction programs already cost effective if reasonable avoided T&D costs are considered, provide an overwhelming benefit to the Commonwealth's electric customers, participant and non-participant alike.

Having done so, the Commission must then take whatever action is necessary to ensure that the Act 129 peak load reduction programs do not "go dark" for 2013.

WHEREFORE, EnerNOC, Inc. respectfully requests that the Pennsylvania Public Utility Commission enter these Comments to the May 25, 2012 Tentative Order into the record. We look forward to participating in the process going forward and contributing our experience and expertise. Thank you again for the opportunity to comment on this important matter.

Respectfully submitted,

By: _____

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DATED: JUNE 29, 2012

COUNSEL FOR ENERNOC, INC.

COMMONWEALTH OF PENNSYLVANIA
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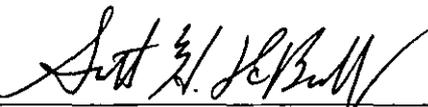
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DOCKET NO. M-2009-2108601

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document “**Comments on behalf of EnerNOC, Inc. in Response to the Act 129 Phase II TRC Test Tentative Order**” in hand to the Commission and electronically to Laura Fusare Edinger at ledinger@pa.gov and Louise Fink Smith at finksmith@pa.gov.

Dated: June 29, 2012

By: 

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