

April 27, 2015

VIA EFILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

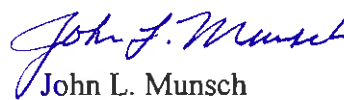
**Re: Act 129 Energy Efficiency and Conservation Program Phase III
Tentative Implementation Order; M-2014-2424864**

Dear Secretary Chiavetta:

Pursuant to the Pennsylvania Public Utility Commission's Tentative Implementation Order entered March 11, 2015, enclosed for filing are the Comments of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company in the above-captioned matter.

Please contact me if you have any questions regarding this matter.

Very truly yours,


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**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Energy Efficiency and Conservation Program :

M-2014-2424864

**COMMENTS OF METROPOLITAN EDISON COMPANY,
PENNSYLVANIA ELECTRIC COMPANY,
PENNSYLVANIA POWER COMPANY AND WEST PENN POWER COMPANY
TO ACT 129, PHASE III, ENERGY EFFICIENCY AND
CONSERVATION TENTATIVE ORDER**

Dated: April 27, 2015

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I. INTRODUCTION

Act 129 of 2008, 66 Pa. C.S. § 2806.1 ("Act 129"), required the Commonwealth's largest electric distribution companies ("EDCs") to develop Energy Efficiency & Conservation ("EE&C") programs. Act 129 required the Pennsylvania Public Utility Commission ("Commission") to evaluate the costs and benefits of: 1) the Phase I energy consumption program; and 2) the Phase I peak demand reduction program by November 30, 2013. If the evaluations demonstrate that the benefits of the programs exceed the costs, Act 129 directs the Commission to set new targets for: 1) energy consumption programs; and 2) peak demand targets to be accomplished by May 31, 2017. In accordance with Act 129's directives, the Commission implemented several activities to determine whether additional incremental consumption and peak demand reduction targets for Phase III, for a period of time after May 31, 2017, should be adopted and, if so, at what levels. The Commission directed the Statewide Evaluator ("SWE") to conduct a Market Potential Study ("MPS") and a Demand Reduction Potential Study ("DRPS") both of which were released on February 27, 2015.

On March 11, 2015, the Commission entered a Tentative Implementation Order ("Tentative Order") outlining its proposed requirements for Phase III EE&C Programs beginning

June 1, 2016, and requesting that stakeholders submit comments by April 27, 2015. Metropolitan Edison Company ("Met-Ed"), Pennsylvania Electric Company ("Penelec"), Pennsylvania Power Company ("Penn Power") and West Penn Power Company ("West Penn") (collectively, the "Companies") offer the following comments for the consideration of the Commission.

II. SUMMARY OF COMMENTS

The Companies are providing comments and recommendations on several major components of the Tentative Order including (1) the lawfulness of required peak demand reduction targets, (2) the applicability of mandatory penalties for demand or energy targets, (3) several aspects of the demand reduction provisions including the DRPS and the proposed level of peak demand reduction targets, (4) the proposed level of consumption reductions in consumption, and (5) carve outs for low income customers and for government, educational and non-profit entities.

An overview of the Companies' major comments is as follows:

- 1) The Commission may not mandate additional demand reduction targets for Phase III of Act 129. Act 129 requires that subsequent reductions in peak demand be achieved by May 31, 2017; however, the Phase III Tentative Order proposes peak demand reduction requirements beyond that date.
- 2) EDCs should not be subject to mandatory Act 129 penalties in Phase III since the penalty provisions under Act 129 for reduction targets have expired.
- 3) The Companies have identified a substantial flaw in the DRPS assumptions regarding PJM participation that, if corrected, would fully eliminate the demand reduction potential for all of the Companies. The ineligibility of customers participating in PJM Emergency Load Response Program ("ELRP") creates legal vulnerability for the Commission's program, and sets the Act 129 Programs and the PJM wholesale market at odds with one another. The Companies also challenge several key assumptions used in supporting the findings that the proposed demand reduction targets can be cost effective. The Companies' targets should be reduced because the demand response market potential is grossly overstated in the DRPS and because many of the factors that may result in the inability to achieve targets are beyond the control of EDCs. The operating criteria should be based on PJM forecasts for the PJM Regional Transmission Organization (RTO) to target

reductions on the 5 Coincident Peak (“5CP”) days,¹ rather than on the EDC forecasts. Furthermore, Penn Power also specifically requests exemption from demand reduction targets.

- 4) The Companies recommend that the targets for incremental reductions in consumption must be adjusted to account for expired savings to align the proposed requirements with the acquisition cost assumption in the MPS.
- 5) The Companies recommend that the Commission should eliminate the requirement for EDCs to achieve 2% of the savings from low-income comprehensive direct-install measures for three main reasons. The budget required to meet this target would result in an inadequate budget to meet the other Plan requirements; there is insufficient market potential to achieve the target; and the increase in the infrastructure required to meet this target is unrealistic. The Companies also recommend that the Commission revise the carve-out for the Government/Educational/Non-profit (“G/E/NP”) sector that requires that 3.5% of the Plan savings must come from the G/E/NP sector. The Companies recommend that the Commission set this target at 33% of the G/E/NP potential for each EDC.

III. COMMENTS

A. Evaluation of the EE&C Program and Additional Targets.

1. Proposed Additional Reductions in Peak Demand.

a. The Commission may not mandate DR targets under Section 2806.1(d)(2) for Phase III of Act 129.

A few threshold issues that must be resolved are the legality, cost-effectiveness and viability of additional mandated DR targets. The Companies believe that, based on legal and factual constraints, additional DR targets should be established only at the discretion of EDCs and may not be subject to Act 129 penalties. The Commission has misconstrued the scope of its authority with respect to DR programs and lacks a proper legal basis on which to order implementation of a Phase III DR initiative.

¹ The Commission describes 5CP in its Tentative Order: “In essence the 5CP hours are the hours of highest demand for the year and PJM must secure sufficient generation to meet that demand.” Tentative Order at p. 28.

i. Section 2806.1(d)(2) of Act 129 provides that mandatory peak demand reductions must be achieved no later than May 31, 2017:

By November 30, 2013, the Commission shall compare the total costs of energy efficiency and conservation plans implemented under this section to the total savings in energy and capacity costs to retail customers in this Commonwealth or other costs determined by the Commission. If the Commission determines that the benefits of the plans exceed the costs, the Commission shall set additional incremental requirements for reduction in peak demand for the 100 hours of greatest demand or an alternative reduction approved by the Commission. Reductions in demand shall be measured from the electric distribution company's peak demand for the period from June 1, 2011 through May 31, 2012. The reductions in consumption shall be accomplished no later than May 31, 2017.

The Commission has incorrectly cited the general reference in Subsection 2806.1(b)(ii) to multiple plans “every five years” to justify extending DR programs beyond May 31, 2017. This interpretation is contradicted by the plain language of subsection 2806.1(d). Under the statutory construction principles “specific over general”² and “later in position,”³ the Commission’s interpretation fails for the following reasons.

Subsection 2806.1(d) contains specific language that “if” the Commission determines that the Phase I DR Plans had benefits that exceeded costs, then it shall set “additional incremental requirements for reduction in peak demand for the 100 hours of greatest demand or an alternative reduction...”⁴ Because this benefit-cost analysis had to be completed by November 30, 2013, it has to refer to Phase I DR Programs, and may only be used to determine whether DR programs should be implemented through May 31, 2017. The Tentative Order is erroneous

² 1 Pa.C.S. §1933.

³ 1 Pa.C.S. §1934.

⁴ The Commission’s analysis also ignores the likelihood that the General Assembly intended the “alternative reduction” in peak to be a reduction with some relationship to the 100 greatest peak hours goal, and not an entirely different Phase III goal that is a construct of the Commission.

because, first, it ignores the Commission's own finding that benefits for Phase I DR did not exceed cost.⁵ Second, it bases its finding of Phase III DR benefits exceeding costs on a projection that Phase III DR benefits will exceed costs which renders irrelevant and takes out of the statute any materiality for the Phase I benefit/cost analysis. The Commission's misconstruction of the statute assumes the General Assembly wanted a Phase III DR Program, even if Phase I failed the benefits cost test. Moreover, subsection 2806.1(d) does not include the reference to further five-year plans included in subsection 2806.1(c). The Commission's analysis assumes the existence of five-year plan authority for DR Programs that is contradicted by the "specific over general" and "later in position" plain language of the subsection and the clear mandate that any further peak reductions required by the Commission be accomplished by May 31, 2017.

Act 129 is clear that the General Assembly intended to set a deadline for any future peak demand reduction targets and no longer require EDCs to meet peak demand requirements after May 31, 2017. Unlike Section 2806.1(c)(3) of Act 129, which directs the Commission "by November 30, 2013 and every five years thereafter" to "evaluate the costs and benefits of energy consumption reductions." Section 2801.1(d)(2) does not contain a provision for five-year extensions.

The legislative language tasks the Commission to evaluate costs and benefits outlined in Phase I by November 30, 2013, with any additional reductions to be achieved no later than May 31, 2017. The Commission conducted this evaluation and found that benefits did not exceed costs to warrant additional reductions. Thus, the Commission may not now prescribe additional peak demand reduction targets pursuant to Section 2801.1(d)(2) of Act 129. The clear

⁵ The Commission previously determined that the Phase I 100 hour peak reduction methodology was not cost effective. *Energy Efficiency and Conservation Program*, Docket Nos. M-2012-2289411; M-2008-206887 (Order entered February 20, 2014) at 7.

language of the Act makes the proposed institution of such targets and penalties late and out of time. At most, the Commission should encourage that EDCs set voluntary DR targets within the EDCs' best judgment. If the Commission sets additional peak demand reductions for Phase III then the Commission should set DR targets that are not subject to subsection 2806.1(f) penalties. Such treatment would be consistent with other Phase III targets such as the carve out for G/E/NP entities.

ii. The Companies contend that Act 129 is the wrong context for developing retail solutions to the uncertainties associated with PJM market proceedings. It is worth noting the Tentative Order does not address PJM's proposed "stop-gap" processes (which was rejected by FERC on March 31, 2015) or the other pending FERC proceeding where DR is at issue. The Commission's proposed exclusion of PJM ELRP participants will create competition between the wholesale and retail programs. Customers will be forced to choose between programs, and ultimately will choose the program they perceive as having more attractive incentives, terms and conditions. Customers receive incentives for participating in the PJM DR program in the form of capacity payments—and these values are continually changing with incremental auctions providing update to initial Base Residual Auction ("BRA") auction results. Furthermore, within the five-year plan window, for delivery years 2019/20 and 2020/21, the BRA has yet to be completed, so the market values of future DR are unknown at the time that incentive levels for Act 129 programs are being designed. This will create huge uncertainty for EDCs regarding their market potential net of PJM participation and may result in the need for aggressive incentives for Act 129 programs beyond the acquisition cost assumptions made in the DRPS.

iii. Furthermore, the Companies note a major flaw in the Statewide Evaluator's ("SWE") calculation of DR potential. By using a simple three-year average of the MW

that cleared the BRA for the delivery years 2012/2013 through 2014/2015 to estimate PJM DR participation, the SWE's estimated PJM DR levels are understated by valuing participation in early years and later years equally. This methodology ignores the trend of increased participation in PJM as shown by the amount of DR that has cleared the BRA over the three delivery years considered in the DRPS. FE Table 1 below shows that if the last year of the SWE's analysis is substituted for the three-year average, there would be no Act 129 DR potential for the Companies. In other words, the difference between the three-year average and the increased results in 2014/2015 exceeds the potential identified by the SWE. Substituting the 2014/2015 value in lieu of the three-year average more than offsets the proposed DR targets in the Order. This supports the Companies' position that DR targets should not be mandated for Phase III because the market potential has not been adequately demonstrated in the DRPS.

FE Table 1: DR Potential Revised to Reflect the Difference in Potential Using 2014/2015 PJM Participation as opposed to simple three year average

Cleared BRA DR Offers MW Notes	2012/13	2013/14	2014/15	3 Year Average (1) (D)= average [(A)+(B)+(C)]	Increased 2014/15 Participation (2) (E) = (C) - (D)	Act 129 DR Targets (3) (F)	Remaining Potential (4) (G) = (F) - (E)
Met-Ed Zone	252	318	398	323	76	49	-27
Total APS Zone	273	523	887	561	326		
WPP - APS Zone ⁽⁵⁾	150	288	488	309	179	64	-115
Total ATSI Zone	n/a	394	1,055	725	330		
PP - ATSI Zone ⁽⁶⁾	n/a	28	74	51	23	17	-6

- (1) This value is the SWE's estimate for PJM DR participation that was used to arrive at final potential, based on average of years 2012/13, 2013/14 and 2014/15.
- (2) This value represents the increased PJM DR participation that is not accounted for in the SWE's estimate and represents the impact on potential
- (3) EDC DR Targets from Table 7, page 36 of the Implementation Order
- (4) This value is the impact on the SWE estimate for potential, after considering the current PJM participation levels
- (5) Consistent with the DRPS, assumes West Penn represents 55% of the DR commitments in the APS Zone based on PJM Load Response Activity Reports for the 2013/2014 and 2014/2015 delivery years.
- (6) Consistent with the DRPS, assumes Penn Power represents 7% of the DR commitments in the ATSI zone based on PJM Load Response Activity Reports for the 2013/2014 and 2014/2015 delivery years.

b. The mandatory penalties for Act 129 Phase I do not apply to Phase III demand and energy targets.

The absence of a proper legal foundation for a required Phase III DR Program *ipso facto* renders untenable the Commission's attempt to impose subsection 2806.1(f) financial penalties for failing to meet Phase III DR goals. Unlawful goals cannot be the subject of Commission penalty authority. If a Phase III DR program is implemented, any Phase III DR goals must be discretionary for the EDCs and not subject to the threat of mandatory penalty if good faith efforts to achieve those goals are made.

Furthermore, as explained below, because the subsection 2806.1(f) penalties are properly construed as only applying to the Phase I reductions explicitly required by statute and not to any subsequent reductions developed and ordered by the Commission, the Phase III EE&C energy reduction targets may also not be subject to mandatory penalties under subsection 2806.1(f).

The Commission rejects alternative plausible interpretations of its penalty authority and leaps to the extreme and unsupported position that Phase III energy and demand goals are subject to a harsh and mandatory penalty of between one and twenty million dollars. Act 129's penalty authority was applicable only to the Phase I "required reductions" explicitly specified in subsections 2806.1(c) and (d) which consisted of the "low hanging fruit" initial reduction requirements.⁶ This interpretation is reasonable and correct since the only "required reductions" known to actually exist at the time Act 129 was promulgated consisted of the Phase I EE and DR reductions are mere potentialities based on the then unknown results of the benefit to cost analysis of Phase I that the Commission was required to conduct, and did conduct, ultimately finding that the benefits did not exceed the costs. It is unreasonable to apply the extraordinary penalty amounts of subsection 2806.1(f) to *any* post-Phase I reduction goal set by the Commission under subsection 2806.1(c) and (d) regardless of its level of difficulty, amount, scope, timing or any of the other variables pertinent to Phase III. Phase I was to achieve reduction of "low hanging fruit," not to subsequent greater reduction targets. The Commission can and should reasonably interpret the penalty provisions of Act 129 to apply only to Phase I reductions, for all mandatory penalties presumed under subsection 2806.1(f).

⁶ Even those reductions did not prove to be as "low hanging" as may have been thought, given that not all Phase I 1% EE&C energy reductions were met and the 100 peak hour programs were not cost beneficial.

c. The Commission should not establish DR targets because of seriously flawed assumptions underlying the findings that the proposed DR targets can be cost effective.

i. The Commission's finding in the Tentative Order that DR targets are cost effective is based on the premise that every MW of DR achieved during an event has a one-to-one impact on the 5CPs used for PJM forecasting that ultimately determines capacity market pricing on the loads used by T&D system planners. It assumes that the four-hour events for up to six days every summer will successfully reduce those forecasts. Further, the Commission's finding that DR targets are cost effective also relies on the assumption that day-ahead forecasting is 100% accurate.

There are a number of serious weaknesses with these assumptions. Unlike energy efficiency investments, which deliver well-defined reductions in load, DR program operations involve voluntary behavior of customers that may or may not perform at times of high loading conditions. High loads may shift before or after the event resulting in the peak load simply moving outside of the four-hour event. This may also cause PJM peak loads or T&D loads to be higher than they otherwise would have been. Should load shifting establish equivalent or higher off-peak loads, avoided costs would disappear.

Peak loading may last longer than four hours, particularly during sustained hot or humid weather. When system loads are high they tend to be high for long periods – generally more than four hours. For example, on July 18, 2013, one of PJM's 5CP days in 2013, loads for the PJM RTO were above 96% of the annual peak load forecast from noon to 8 p.m.⁷ This example shows that the four-hour event criterion alone presents uncertainty regarding the effect the event

⁷PJM Interconnection, Summer 2013 Weather Normalized RTO Coincident Peaks, 5CPs: <http://www.pjm.com/planning/resource-adequacy-planning/load-forecast-dev-process.aspx>. See also, PJM Metered Load Data, 2013 hourly loads: <http://www.pjm.com/markets-and-operations/ops-analysis/historical-load-data.aspx>.

would have on reducing an EDC peak load, and thus on the likelihood of avoiding any costs. Forecasting accuracy and the number of peak load days only adds to the uncertainty. For example, the SWE articulates in the DRPS that a hot weather period during June or July may cause the six events to be called, and then August may bring even hotter weather, causing more peaks.

The premise that DR events will have a direct impact on the PJM 5CP is unreasonable, as was acknowledged in the DRPS.⁸ The Tentative Order also acknowledges the absence of a 100% correlation between its proposed program protocol and the DRPS: “*The SWE determined that this methodology would have historically captured approximately 27% of the target load⁹ and approximately 58% of the 5CP hours.*”¹⁰ However, the analysis used in the DRPS to determine cost-effectiveness analysis failed to take this into account when calculating benefits from DR events.¹¹ Thus, the Tentative Order materially overstates the avoided capacity cost benefits and results in inaccurate cost-effectiveness ratios. In addition, with respect to avoided T&D costs, it should be noted that not all customers who would participate in the EDC DR programs are located in areas with constrained T&D infrastructure. Demand reductions from these customers may not affect the parameters used to make T&D investments. Furthermore, customers participating in the EDC DR programs may choose not to participate in each given event hour or day. And customers participating in one year may choose not to participate in subsequent years. Assuming a 100% correlation overstates the value of avoided T&D costs. The DRPS recognized: “*T&D avoided costs are based on infrastructure expenditures that can be avoided if an EDC’s*

⁸ Section 2.7 of the DRPS indicates: “Practical considerations for DR program design may place natural limits on its effectiveness. Program budgets can be exhausted by a large number of DR events, and the timing of system peaks cannot be predicted with perfect accuracy....” The benefits realized from PLC reduction will be directly proportional to the ability of the program design to capture the 5CP hours in a given year. DRPS at 25-26.

⁹ Target load is the energy above 90% of the peak load forecast for the year.

¹⁰ Tentative Order, at 27, footnote 42: *See DRPS* at page 31.

¹¹ DRPS at 23 “We are assuming that each kW of observed load reduction from an Act 129 DR program will lower PJM’s summer peak load forecast and subsequent reliability requirement by 1 kW in a future delivery year.”

*load growth can be reduced with DR programs that reduce load at utility peak loads.”*¹² Thus, the proposed DR event protocols may have no effect on utility peak loads and may result in zero avoided T&D costs. The Commission’s finding in the Tentative Order that DR targets are cost effective relies heavily on avoided T&D costs. The Companies have concerns with the avoided T&D values used in the DRPS,¹³ and with the finding that programs would be cost effective.

iii. The conclusion that programs are cost effective is also based on a false assumption that customers will respond to incentives that are less than the value of the projected benefits. The SWE’s DRPS began with the assumption that all costs including administrative costs and incentives were less than or equal to benefits, and that customers would respond to such incentives. This assumption forces a finding that the program design would be cost-effective because the SWE forces incentives and administrative costs to be less than the value of the projected benefits. In actuality, as discussed below, attracting customers who are not already participating in PJM DR programs may require incentives and administrative costs that are greater than the value of the projected benefits and, therefore, cost-effectiveness remains uncertain at best.

d. Notwithstanding the above arguments, if the Commission finds that DR targets are still necessary, then the Companies recommend changes to the Tentative Order.

i. The Market Potential for Demand Reduction is grossly overstated and the Companies’ targets should be reduced. If targets are set for Phase III, the proposed targets should be reduced and that the results from actual experience from Phase I should be considered the maximum achievable potential.

¹² DRPS at 34.

¹³ The Companies comments to the values proposed by the Commission for avoided T&D costs are addressed in the comments to the Tentative TRC Order, Docket M-2015-2468992.

1. The Companies believe the SWE's methodology to calculate net potential after excluding PJM DR participation is flawed. First, one of the fundamental assumptions made in the DRPS is the assumption that price elasticity for participants in California programs is applicable to Pennsylvania non-participants.¹⁴ *That elasticity cannot be presumed to apply to current non-participants in PJM programs in Pennsylvania.*

Customers participate in DR programs because it makes financial sense for them to do so. Examination of participants in the 2012 programs shows that customers with one or more of the following attributes are overrepresented in the program, relative to the general population of customers:

- The customer has the business flexibility and technical means to shut down significant portions of their operation for several hours, at a day's notice;
- Energy and demand costs are a significant portion of the customer's operating costs; and,
- One decision maker at the customer's facility has control over a very large amount of load.

Customers are less likely to participate when the conditions above are not met. It is reasonable to assume that the population of customers who are not already participating in PJM's DR market most likely have not met those conditions. For some customers no financial incentive may be enough to attract participation, due to other potential non-financial barriers. Such barriers could include commercial service or health care facilities that are unable or unwilling to disrupt critical business operations during summer on-peak periods.

¹⁴ Price elasticity is defined as the percentage change in quantity for a given percentage change in price and, as it applies here, customer's willingness to curtail use of electricity in exchange for payment.

Second, the methodology used by the DRPS to calculate DR potential was based on the difference between two large highly uncertain values. The first of these is the DRPS estimate of total potential for DR and the second is the estimated PJM commitments. The difference was used to establish the DR targets. Any estimate that is derived this way is likely to suffer from high volatility and produce inordinate risks for all EDCs. For example, the PJM commitments for West Penn vary by 134 MW from 2016 to 2017, which is over two times the proposed target for West Penn.

2. The Companies recommend that targets be set at values no greater than those achieved in Phase I, adjusted for PJM participation. The Companies have actual experience gained from Phase I of Act 129, where extremely aggressive outreach, marketing, and incentive levels were required to encourage the enrollment of customers capable of delivering approximately 152 MW across the Companies, excluding Penelec. Of those customers, only the amount of 32 MW is from customers not currently enrolled in PJM programs, reflecting continued success of the PJM programs for these EDCs. See FE Table 2 below. The Companies believe that their Phase I experience should be considered the maximum achievable DR potential because it is based on proven real-world experience. The table presents the Phase I statistics for the Companies and calculates the remaining potential if customers participating in PJM markets are excluded. The Companies recommend the targets should be reduced as shown in Column E below which considers the maximum achievable potential as demonstrated in Phase I, adjusted for increasing PJM participation.¹⁵

¹⁵ Penn Power specifically requests exemption from DR MW targets. See Section III.A.1.d.

FE Table 2: MW Targets and Phase I Participation Net of PJM

EDC	Proposed Phase III Target (PJM Ineligible)	Phase I (2012) Participation (Includes PJM)	Phase I (2012) Participation (Not in PJM 2014/15)	Phase I (2012) Ineligible Participation (In PJM 2014/15)	Revised Phase III DR Targets
	(A)	(B)	(C)	(D) = (B) - (C)	(E) = (B) - (D)
ME	49	48	15	33	15
PP	17	23	11	12	11
WPP	64	81	6	76	6
Total	130	152	32	120	32

For these reasons, the Companies believe that if DR targets are set for Phase III, the proposed targets should be revised to reflect results from Phase I, as presented above, exclusive of the increased PJM participation.

ii. Operating criteria should be based on PJM forecasts for the entire Regional Transmission Organization (RTO) to target reductions on the 5CP days, rather than relying on forecasts of the EDC zonal loads which do not coincide with the PJM RTO system peak.

The Commission specifies the primary criterion for events as follows:

Curtailment events shall be called for the first six days that the peak hour of PJM's day-ahead forecast for an EDC is greater than 96% of the EDC's PJM summer peak demand forecast for the months of June through September each year of the program.

The above criterion raises three basic issues, all of which can be resolved by using the PJM RTO forecast, not the EDC forecasts, and replacing the reference to "an EDC" with "the PJM RTO" in the sentence so it would read:

Curtailment events shall be called for the first six days that the peak hour of PJM's day-ahead forecast¹⁶ for THE PJM RTO is greater than 96% of the PJM RTO summer peak demand forecast¹⁷ for the months of June through September each year of the program.¹⁸

First, the protocol references “the EDC’s PJM summer peak demand forecast,” then later references PJM’s forecast as the source. Clarifying that the published PJM forecast for the RTO is applicable makes direction consistent.

Second, the proposed DR operating strategy, based on the DRPS,¹⁹ is designed to achieve reductions to the PJM 5CPs. This incorrectly assumes EDC peaks are coincident with the PJM RTO peaks. Using the PJM RTO forecast mitigates the incorrect assumption of EDC peaks being coincident with the RTO peaks.

Third, Penn Power serves only a portion of the PJM ATSI zone, and West Penn serves only a portion of the PJM Allegheny Power System zone. PJM does not produce forecasts at the EDC level. In the event the Commission determines PJM zones are to be used, the Commission must address the protocol for these EDCs. Revising the DR protocol to use the PJM RTO System forecast will resolve this issue for West Penn and Penn Power.²⁰

¹⁶ The Companies are proposing to use the PJM 7-day load forecast found at the following link: <http://www.pjm.com/markets-and-operations/energy/real-time/7-day-load-forecast.aspx>.

¹⁷ The Companies are proposing to use Table B-1 of the annual PJM Load Forecast Report. A copy of the January 2015 report can be found at the following links:

<http://www.pjm.com/~media/documents/reports/2015-load-forecast-report.ashx> and

<http://www.pjm.com/~media/documents/reports/2015-load-report-data.xls.ashx>.

¹⁸ Tentative Order at 37.

¹⁹ DRPS at 25-26.

²⁰The Companies’ simulated DR operations for 2013 based on the recommended operating criteria. Results indicate greater success of capturing the 5CP hours using the forecast for the RTO than would result from using forecasts for the EDC zones. Other observations include: 1) Penn Power’s ATSI zone would have missed three of the five critical peak hours due to non-coincidence of the zonal load with the system load. That is, the events would have started earlier than an event focused on RTO load and ended before the 5CP hours, and could have added load during the critical peak hour during a “snap back” recovery period. 2) Even using the RTO zone forecast, loads after the event window closed were not significantly lower than the peak, supporting potential for load shifting.

iii. Demand Response budgets are inadequate to meet the targets and should be increased.

1. The assumed acquisition costs in the DRPS are significantly lower from what was required to attract customers to participate in Phase I for the commercial/industrial load curtailment programs.

The DR acquisition costs used for the EDC targets are presented in Table 7-1 of the DRPS. In comparison, the actual incurred costs of the commercial/industrial load curtailment programs as operated by the Companies are shown in FE Table 3. Comparing the two tables shows that the acquisition costs in Phase I were 71 % greater than are proposed for Phase III.

Table 7-1: Average Annual Phase III Load Curtailment Acquisition Costs

EDC	Acquisition Cost (\$/MW-Year)
Duquesne	\$57,976
FE: Met-Ed	\$51,210
FE: Penelec	\$50,782
FE: Penn Power	\$49,349
FE: West Penn	\$46,203
PECO	\$58,893
PPL	\$41,622
Statewide Average	\$52,310

FE-Table 3– Phase I Acquisition Costs²¹

Act 129 - C/I Load Curtailment - 2012 DY			
EDC	Gross MW	Total Cost	\$ /MW-Year
FE: West Penn	93.6	\$6,304,000	67,350
FE: Penn Power	27.0	\$2,438,000	90,296
FE: Met-Ed	51.2	\$4,808,000	93,906
FE: Penelec	54.4	\$4,645,000	85,402
		Average	84,239

Any future demand response participant would have to choose to participate in the Act 129 program or in the competing PJM program. As discussed earlier, to attract customers that are not already participating in PJM programs will most likely require an incentive structure that is more attractive than current PJM market incentive structures.

For this reason, budgets should be revised to reflect the Companies' actual acquisition cost from Phase I of Act 129, as shown in FE Table 3, with a mark-up of at least 30% to provide adequate incentives to compete with the PJM programs for new participants.

e. Penn Power specifically requests exemption from DR MW targets.

i. As discussed earlier in Section III.A.1.a.iii, a major flaw in the DRPS is the use of a three-year average to estimate PJM DR participation. This ignores the actual trend of increased participation, understates PJM participation and, therefore, overstates the DR potential across all Companies. For Penn Power this is a particularly egregious flaw for the following reasons:

²¹ West Penn, Pennsylvania Power, Penelec Final Annual Report to the Pennsylvania Public Utility Commission June 2012 to May 2013, Program Year 4

1. Because the ATSI integration into PJM occurred during delivery years 2011/12 and 2012/13, PJM DR programs were still new to Penn Power customers and the market was in infancy. As a result, there was significant ramp up of the PJM program over the subsequent years. This ramp up is typical of new programs, as it took time for customers to be engaged and recruited into the programs. The rapid increase in PJM commitments at Penn Power over this time period is illustrated in FE Table 1 and shows the heightened issue with the SWE's three-year average assumption for Penn Power.²²

2. Penn Power load shapes are heavily influenced by a few major customers that currently participate in the PJM ELRP. Currently, 98 commercial and industrial customers representing over 163.5 MW or 33% of the Penn Power commercial and industrial load are participating in the PJM ELRP program. This significantly diminishes Penn Power's Act 129 DR potential and aggravates the potential for competition between Act 129 and PJM DR programs at Penn Power.

3. ATSI peak loads and Penn Power peak loads are not coincident due to the geographic footprint of the ATSI load in relation to the Penn Power load, and since Penn Power loads are only approximately 7% of ATSI loads, any peak reductions at Penn Power will not likely reduce ATSI peaks. Furthermore, neither Penn Power loads nor ATSI loads are coincident with PJM RTO loads creating a material disadvantage for performance of curtailable load at times of PJM system peaks.

4. The Commission's proposed Act 129 penalties would be unfairly disproportional for Penn Power, which is the smallest EDC in the

²² In addition, the ATSI transition into PJM included Fixed Resource Requirement (FRR) auctions with the last auction occurring during delivery year 2012/13. The SWE's analysis omitted the FRR auction DR results which further understates the PJM DR participation in that delivery year.

Commonwealth. As a percentage of distribution revenues, such penalties would represent more than 21% of Penn Power's distribution revenues. Clearly the magnitude of such penalties are inappropriate, particularly given uncertainties as discussed above.

2. Proposed Additional Incremental Reductions in Consumption

a. The Proposed Additional Incremental Reductions in Consumption are inappropriate and should be reduced.

i. The savings targets established in the Tentative Order fail to reflect the requirement to replace savings that expire and, therefore, conflict with the MPS. The basis of the potential savings used for EDC saving targets, as presented in Table 6 of the Tentative Order, is the sum of incremental annual savings from program years 2016-2020.²³ However, the Commission states in the Tentative Order that measures that expire must be replaced.²⁴ Therefore, the targets in the Tentative Order do not account for the replacement of savings from measures that expire. It is imperative that targets be revised to reflect the sum of the incremental annual savings adjusted to account for the expiring savings, consistent with the MPS and the Tentative Order.

As can be seen in Table ES-1 and ES-6 of the Phase III MPS for the scenario that all Act 129 funds are devoted to energy efficiency rather than demand response, the EDCs would spend \$1.2 billion in the period 2016-2020 to achieve 5,092,433 MWh cumulative savings rather

²³ The SWE writes: "*Phase III program potential reflects the 5-year sum of incremental annual savings from June 1, 2016 through May 31, 2021*" in footnote 3 of the document **Application of Market Potential Study Results to Phase III Goals – Addendum to 2015 SWE Market Potential Studies**, p. 5.

²⁴ The Commission writes: "Therefore, we propose that, for any measures installed whose useful life expires before the end of the phase, another measure must be installed or implemented during that phase which replenishes the savings from the expired measure" in Section A.4.c of the **Tentative Implementation Order**, p. 43.

than the 6,629,461 MWh that corresponds to the sum of the incremental annual savings.²⁵ The table associated with targets (Table 6 of the Tentative Order at p. 42 or Appendix D, p. 5) is a simple sum of incremental annual savings with no consideration of the expiring savings, consistent with presentation of Tables ES-5 and ES-6 in the MPS, and does not reflect costs associated with replacing savings from expiring measures. That calculation conflicts with the explicit caution in the MPS that costs of expiring measures must be considered in establishing savings targets. Discussion supporting table ES-3 of the MPS shows that the acquisition costs used are before consideration of the cost of replacing any expiring savings.

The program potential energy savings in Table ES-5 are therefore the sum of the incremental annual savings achieved in each of the years spanning 2016 through 2020. This total is different than the cumulative annual program potential savings estimate of 5,092,433 MWh shown in Tables ES-1 and ES-3 due to the differences in incremental annual savings and cumulative annual savings described above... The differences in the sum of the incremental annual and cumulative annual program potential savings should be carefully considered when using this report to inform the establishment of future savings targets for Phase III of Act 129. (MPS at p. 8).

Phase III total costs associated with achieving targets based on the sum of incremental annual savings adjusted to account for the expiring savings as shown in Table ES-3 of the SWE MPS will be higher than reflected in the Tentative Order. Therefore, to align with the Phase III total Program Acquisition Costs, it is imperative that targets be revised to reflect the sum of the incremental annual savings adjusted to account for the expiring savings, consistent with

²⁵ On page 4 of the MPS the SWE writes: "The SWE Team estimates that **with the current annual spending cap**, the seven EDCs can achieve a combined annual savings equal to 0.8% to 1.0% of 2010 load per year. After accounting for measure savings adjusted to account for the expiring savings and annual savings adjustments for codes and standards, the cumulative annual program potential in 2020 is **5,092,433** megawatt hours (MWh) or 3.5% of the baseline load."

the MPS and the Tentative Order. FE Table 4 below reflects the revised targets based on the sum of incremental annual savings adjusted to account for the expiring savings and the Program Acquisition Costs consistent with Table ES-3 of the MPS.

FE Table 4: Revised MWh Targets Reflecting the Cost of Replenishment for Expired Savings

	Values from Table 6 of Tentative Order (p42)			Revised Targets Consistent with Table ES-3 of Potential Study
	Portfolio Spending Ceiling (Million \$)	Program Acquisition Costs (\$/1 st -YR MWh Saved)	2016-2020 Potential Savings (MWh)*	2016-2020 Potential Savings (MWh)**
Duquesne	\$88.00	\$186.90	470,609	360,880
FE: Met-Ed	\$114.40	\$182.20	627,814	478,660
FE: Penelec	\$114.90	\$191.90	598,612	477,527
FE: Penn Power	\$30.00	\$176.10	170,182	128,992
FE: West Penn	\$106.00	\$181.00	585,807	447,107
PECO	\$384.30	\$184.70	2,080,553	1,590,447
PPL	\$292.10	\$183.70	1,590,264	1,222,147
Statewide	\$1,129.70	\$184.40	6,123,841	4,704,041

* Before consideration of replenishment of expiring savings from Phase III measures

**Including replenishment of expiring savings from Phase III measures, but not including the cost of sector carve-outs.

ii. The savings targets established in the Tentative Order are based on acquisition costs that do not consider the costs associated with the 2% low-income direct install requirement and G/E/NP sector carve-out.

The MPS provides minimal documentation and details regarding whether any low-income direct install target is reflected in the SWE's assessment of program acquisition costs, savings potential or the 2% direct install target articulated in the Order. It is the Companies' presumption that the SWE was not commissioned to assess costs associated with a 2% low-income

direct-install target, and that the costs to achieve the proposed low-income and G/E/NP targets were not considered. The Companies' assessment is that the costs to achieve the 2% low-income direct install target, if it is possible to achieve, will require a significant portion of the budget leaving inadequate funding to support the balance of savings.

Actual acquisition costs associated with comprehensive low-income direct install programs are approximately \$2,160 /MWh,²⁶ which (if willing customers and contractors were available to support both Act 129 and LIURP targets as discussed further below) implies requiring a low-income budget of approximately 25% of the total Act 129 budget for the Companies for 2% of the portfolio savings.²⁷ Funding available for the remainder of savings would reflect a significantly lower and completely unreasonable acquisition cost of \$137/MWh.

Similarly, while the Order acknowledged the increasing acquisition costs of providing certain measures to the G/E/NP sector (Tentative Order at p. 56) it also failed to reflect those costs in establishing the EDC energy savings targets. The Order recognized "unique circumstances that create barriers to participation in programs" (Tentative Order at p. 62) but failed to reflect any budget or acquisition cost premium for the G/E/NP sector in establishing EDC energy savings targets. This is also consistent with findings of the MPS which states: "Higher budgets for either set-aside program would have the consequence of reducing the overall budget for the broader portfolio, leading to reduced program potential savings." (MPS at p. 59)

²⁶ Includes direct and indirect costs. Note also that use of aggregated low-income program savings in Phases I and II would be misleading. Low Income programs for Phases I and II included incremental, non-direct installation low-income program strategies with relatively modest acquisition costs (e.g., low-income/low use kits and events) that support savings and customer engagement, but will have limited viability in Phase III given language requiring direct-installation in the Tentative Order.

²⁷ The product of 2% times the MWh target from Table 6 (6,123,841 MWh), times \$2,485/MWh divided by the Portfolio Spending Ceiling (\$1,129.7 MM) from Table 6.

Given these major budgetary concerns, the Companies further recommend revisions to its low-income and G/E/NP targets, as discussed below, to reflect a more equitable distribution of compliance risk among all Pennsylvania EDCs.

iii. The MPS and Tentative Order fail to consider the levels of uncertainty associated with the estimate of program savings potential and acquisition costs.

The MPS involves models and estimates of market potential and savings acquisition costs that involve high levels of uncertainty. While the MPS estimates savings potential, the levels of uncertainty in any of the savings potential or acquisition cost estimates receive limited discussion.

Any estimate has an error band when models are involved and there is significant potential for compound errors (i.e., combining estimates, each having error bands). The savings potential estimates, as presented, represent a mid-point estimate of potential (or acquisition costs) implying a 50/50 chance the EDC targets are achievable.

Given the penalties prescribed under Act 129, the Commission must allow for a more reasonable degree of uncertainty associated with the estimates it relies on to establish savings targets. The Companies recommend the SWE provide the Commission an assessment of the confidence and precision associated with its estimates, and that the Commission reflect that uncertainty in the targets to give EDCs better than a 50/50 chance of having an achievable target. To demonstrate the points above, the Companies asked their independent consultant, ADM Associates, Inc. (“ADM”), to develop illustrative examples of the risks associated with the targets which are attached as Attachment 1. The Commission and SWE have recognized uncertainty as a factor associated with achievement of targets. For example, in Phase I, the Commission found Penn Power to be compliant with respect to the demand reduction target for the G/E/NP sector

because the verified demand reduction, including the 6% evaluation uncertainty, exceeded the Act 129 target.

The Companies recommend that the Commission recognize that the estimation of achievable targets is also subject to uncertainty. Act 129 impact evaluations are retrospective and are conducted annually according to the Evaluation Framework. The impact evaluation work products are independently audited by the SWE. In contrast, the MPS is prospective and is conducted once per phase on a fraction of the budget afforded to impact evaluation. It is natural to expect that market potential estimations would have larger uncertainties than corresponding impact evaluations.

Therefore, the Companies request that, consistent with the logic of the Phase I compliance proceedings, the Commission further adjust the MWh target to account for the uncertainty so that the EDCs have a greater chance of achieving the target. Although ADM estimates the uncertainty to be at least 10% the Companies recommend reducing the compliance target by at least 10% to 20% to reflect the level of uncertainty associated with the MPS estimates and resulting targets.

3. Prescription of a Low-Income Carve-Out.

a. The low income 2% target for comprehensive direct install measures is unrealistic and should be removed.

The Companies believe that the 2% target for comprehensive direct install low-income programs is overly aggressive, unreasonable and costly, and should be removed given: 1) failure to consider the low-income usage reduction program (“LIURP”) targets when assessing the potential and setting the Act 129 target, 2) unreasonable budgetary impacts, and 3) limited infrastructure to support both LIURP and Act 129 program requirements.

i. While the MPS reviewed low-income potential for the Commonwealth it failed to address EDC-specific potential and failed to consider the LIURP targets when assessing the potential.

The MPS assumed that low-income customers at or below 150% of the Federal Poverty Income Guidelines (“FPIG”) could achieve approximately 12% of total portfolio base achievable savings, when including savings from low-income participation in non-low-income programs and savings from low-income multifamily housing contributions from the residential sector. This is based on the assumption that participants are willing to identify themselves as low income, are willing to participate and allow a contractor to do work in their homes, or have landlords who will allow work to be completed. The MPS did not assess the potential associated with direct install programs, and also asserts that the greatest potential for the low-income sector is in lighting programs, not direct install programs. The SWE team estimated savings from the low-income sub-sector in the analysis based on historical program offerings and experience as well as current market conditions. The savings estimated in the MPS included savings associated with low-income low use kits and providing CFLs at low-income events and savings were not specific to savings from comprehensive direct-install programs.

All EDCs have a limited population of potential participants in either the Act 129 low-income programs or LIURP. LIURP is a statewide, utility-sponsored, free residential energy usage reduction program designed to help low-income households lower their energy bills and reduce energy consumption through weatherization and energy education services. Neither the Tentative Order nor the MPS mention the LIURP regulatory initiative which also has the potential for penalties and competes with achievement of the proposed mandates under Act 129.

The Companies' latest LIURP filing is included in the 2015-2018 Universal Service and Energy Conservation Plans ("USECP") at Docket Nos. M-2014-2407728, M-2014-2407729, M-2014-2407730, and M-2014-2407731, and includes a four-year budget of \$68.1 million and participant goals of 22,290 homes across the Companies. Since 2009, the Companies have served approximately 40,000 low-income homes with comprehensive measures through the USECP, LIURP and Act 129 programs.

FE Table 5 below shows the low-income customer population identified in the Companies' systems, customers served to date since 2009 under LIURP and projected to be served through 2018, and customers served to date since 2009 under Act 129 Phases I and II and projected to be served through the end of Phase II. In addition, the table estimates the number of customers whose landlords do not accept services and customers who will not respond or are moving. The table also estimates the number of customers needed to achieve the proposed Phase III 2% direct install targets. The table shows there are insufficient known low-income customers to meet the proposed 2% targets at all Companies.

FE Table 5: Estimated Homes Required to Meet Phase III 2% Low-Income Direct Install Target and Remaining Potential

	ME	PN	PP	WP	Total
Total Identified Low-Income Customers	65,675	82,375	18,953	58,042	225,045
LIURP					
Served by LIURP 2009-2014	8,652	12,904	4,416	4,620	30,592
Plan to be served in LIURP 2015-2018	5,990	9,110	3,400	3,790	22,290
Total LIURP	14,642	22,014	7,816	8,410	52,882
Act 129 Phases I and II					
Served by Act 129 Phase I and II (Note 1)	14,572	28,151	6,501	19,342	68,566
Plan to be served PY6Q4 and PY7	4,725	6,962	1,345	2,656	15,688
Total Act 129	19,297	35,113	7,846	21,998	84,254
Adjustments to Potential					
Landlords who will refuse services (Note 2)	6,805	8,535	1,964	6,014	23,317
Customers who will not respond or moving (Note 2)	24,163	30,307	6,973	21,354	82,797
Total Adjustments	30,967	38,842	8,937	27,368	106,114
Remaining Potential	769	(13,594)	(5,646)	266	(18,205)
Act 129 Phase III					
Proposed Low-Income Direct Install Goal (MWh)	12,556	11,972	3,404	11,716	39,648
MWh Savings per Home (LIURP 2013 reports) (Note 3)	1.246	0.969	0.831	1.258	
Calculated Homes Required to Meet Targets	10,077	12,355	4,096	9,313	35,842
% of Remaining Customers that must Participate	1311%	-91%	-73%	3503%	-197%

(1) Includes Warm Plus, LILU, JUUMP and LIEEP. Progress through February 2015 of Phase II.

(2) Low-income customers that would not qualify due to no landlord approval, do not respond, or moving based on LIHEAP initiative.

(3) Assumes homes have sufficient usage to support direct installation services; Savings per home is based on 2013 LIURP reported savings weighted by job type (e.g., electric heat, base use, etc.)

Some EDCs also have fewer customers at 150% of FPIG. For instance, as shown in the above table, Penn Power has only 18,953 customers identified as low-income and many of them have already been served by Phase I and II and already served or to be served by LIURP from 2009-2018, leaving only approximately 4,600 customers to be served for the remainder of Phase II and during Phase III, without consideration of landlords who refuse services or customers who do not respond to low-income outreach.

The Companies believe the EDC-specific potential for participants associated with combined LIURP and Act 129 program targets does not exist to support establishment of the 2% direct install target for Phase III of Act 129. Therefore, the Commission should remove the 2% low-income carve-out.

ii. The Companies also believe that the funding required to achieve the 2% direct install target is unreasonable and would essentially prevent EDCs from having adequate funding to achieve their Phase III targets. Actual acquisition costs associated with comprehensive low-income direct install programs are approximately \$2,160/MWh which will require a low-income budget of approximately 25% of the total Act 129 budget for the Companies for 2% of the portfolio savings, as detailed in the following chart.

FE Table 6: Budget Required to Meet Phase III 2% Low Income Direct Install Target

	A	B	C	D	E	F	G
EDC	Proposed Low-Income Direct Install Goal (MWh)	Average Verified Savings/Home (MWh)	Cost Per Home (\$)	Number of Homes Needed	Costs (\$1000)	Total EDC Budget (\$1000)	Percent of Phase III EE and DR Budget
Met-Ed	12,556	1.246	2,255	10,075	22,720	\$114,400	20%
Penelec	11,972	0.969	1,802	12,353	22,260	\$114,900	19%
Penn Power	3,404	0.831	1,943	4,094	7,955	\$30,000	27%
WPP	11,716	1.258	3,308	9,317	30,820	\$106,000	29%

A - Order at 57

B - Reported LIURP Savings per Home in 2013 weighted by job type

C - Reported LIURP Costs per Home in 2013 weighted by job type

D - A / B

E - C x D

F - Order at 42

G - E / F

Comprehensive programs are more labor intensive and slow to obtain results. Administrative costs are much higher with a comprehensive program and, therefore, less funds

will be available for other low income measures. As previously indicated, this is consistent with findings of the MPS which states “higher budgets for either set-aside program would have the consequence of reducing the overall budget for the broader portfolio, leading to reduced program potential savings.” (MPS at p. 59.) To meet the 2% target, additional costs will also be needed to market a direct install program. During the last three years, the Companies have spent almost \$1 million in marketing the LIURP and Act 129 low-income energy conservation programs and have struggled to obtain the necessary number of homes to meet existing goals. Given the magnitude of the increase required to meet the proposed Phase III target, the marketing costs will greatly increase and likely will not result in enough participants to reach the MWH goals in the Tentative Order.

The Companies recommend that any sector targets must be reasonably attainable under the 2% budget cap, and any increased cost associated with mandated direct install programs for the low-income sector must be explicitly accounted for in the acquisition cost calculation.

iii. The infrastructure of agencies and contractors does not exist to support the 2% comprehensive direct-install, low-income target. Some of the same contractors are working with the state weatherization program, natural gas distribution companies and EDC programs, and many weatherization auditors and crews have left weatherization work to go to the gas pipeline industry and other industries. In Phase II the Companies’ Request for Proposal was sent to 67 potential contractors and conservation service providers. Of those, only 30 contractors and agencies submitted proposals to work on Act 129 across the Companies. Many have also been asked to increase their workload for LIURP and have declined the opportunity.

Further highlighting this concern, the Companies estimated the number of customers who would be needed to participate to achieve the proposed 2% direct install target. As shown in FE Table 7 below, the Companies would require infrastructure capacity to quadruple

from the levels provided in Phase I and Phase II, which along with the LIURP jobs in the 2015-2018 period, is simply unrealistic.

FE Table 7: Infrastructure Capacity Required to Meet Phase III 2% LI Target

Low Income Comprehensive Direct Install					
	ME	PN	PP	WP	Total
Act 129 Phase I & II					
Served by Act 129 Phase I Comprehensive "Direct Install" (WARM Plus/MF, JUUMP)	1,697	2,263	397	791	5,148
Served by Act 129 Ph II Direct Install (Note 1)	1,042	1,278	465	929	3,714
Projected to be served by Plus and Multifamily Ph II PY6Q4 and PY7	725	962	345	656	2,688
Total Act 129 Low Income Direct Install	3,464	4,503	1,207	2,376	11,550
Annual Act 129 Production 2009-2015	495	643	172	339	1,650
Act 129 Phase III					
Proposed Low-Income Direct Install Goal (MWh)	12,556	11,972	3,404	11,716	39,648
MWh Savings per Home (LIURP 2013 reports) (Note 2)	1.25	0.97	0.83	1.26	
Calculated Homes Required to Meet Targets	10,077	12,355	4,096	9,313	35,842
Required Annual Production	2,015	2,471	819	1,863	7,168
Increased Production	407%	384%	475%	549%	434%
(1) WARM Plus and Multi-family, reflecting progress through February 2015 of Phase II.					
(2) Savings per home is based on LIURP reported savings in 2013 weighted by job type (e.g., electric heat, base use, etc.)					

Given these concerns, the Companies recommend that the Commission eliminate the proposed requirement for EDCs to achieve at least 2% of the savings from comprehensive direct install measures in the low income sector.

4. Carve –Out for Government Educational and Nonprofit Entities

a. The sector carve-out for Government Educational and Nonprofit Entities is disproportional in the Tentative Order and should be revised.

The Commission proposes that EDCs file an EE&C Plan to obtain a minimum of 3.5% of all EE requirements from the federal, state and local governments, including municipalities, school districts, institutions of higher education and non-profit entities (“G/E/NP”). This carve out was established based on the SWE’s estimate of program potential for this sector for all of the Pennsylvania EDCs, which ranged from 3.5% to 10.4% of the Total Portfolio Savings for each EDC as detailed in the chart below (column C).

FE Table 8: Government/Educational/Non-Profit Potential and Targets

EDC	A Total Portfolio Savings	B 2016-2020 Incremental Annual Program Potential Savings (MWh)	C % of Total Portfolio Savings	D 3.5% of Total Portfolio Savings - Carve Out per Order	E % of G/E/NP Program Potential	F Recommended G/E/NP Carve Out
Duquesne	470,609	48,943	10.4%	16,471	33.7%	16,151
FE: Met-Ed	627,814	21,973	3.5%	21,973	100.0%	7,251
FE: Penelec	598,612	34,719	5.8%	20,951	60.3%	11,457
FE: Penn Power	170,182	6,637	3.9%	5,956	89.7%	2,190
FE: WPP	585,807	28,119	4.8%	20,503	72.9%	9,279
PECO	2,080,553	191,411	9.2%	72,819	38.0%	63,166
PPL	1,590,264	93,826	5.9%	55,659	59.3%	30,963
A - Table 6: Modified Five-Year Energy Efficiency Program Potential Savings and Budget by EDC						
B - Table 8: Commercial GNI Sector 2016-2020 1st Year Program Potential Savings by EDC						
C - Table 8: Commercial GNI Sector 2016-2020 1st Year Program Potential Savings by EDC						
D = 3.5% x A						
E = D / B						
F = 33% x B						

The Companies recommend that the Commission instead establish the target at 33% of the program potential for the G/E/NP sector (column F in chart above) for each EDC and not the fixed 3.5% of the Total Portfolio Savings. The 33% of the program potential for the G/E/NP sector would result in each EDC targeting a proportionate amount of the program potential

identified by the SWE. As shown in the above chart the fixed 3.5% carve out would require Met-Ed and Penn Power to essentially capture all of the program potential identified for this sector while other EDCs would have to capture much smaller portions of this potential (column E in chart above). This fixed carve out creates an inequity among the EDCs similar to the fixed 1% and 3% targets that existed under Phase I of Act 129 and will require EDCs to dedicate disproportionate funding and resources to achieve this target potentially increasing the risk of not meeting their overall EE targets. Requiring certain EDCs to target all of the potential in this sector will require greater acquisition costs, such as increased outreach activities, marketing and incentives. However, there is no consideration of the impact of the sector carve outs (both G/E/NP and low income) on the acquisition cost assigned to the individual EDCs to determine their overall EE targets. Changing to 33% of the program potential for the G/E/NP sector provides an equitable target across all of the Pennsylvania EDCs. It and partially mitigates concerns with there being no consideration of the sector carve outs on the acquisition costs for each EDC, and balances the limitations of the overall G/E/NP potential estimated in the SWE's MPS with the Commission's desire for EDCs to focus attention on the G/E/NP sector.

Finally, EDCs that cover large metropolitan areas are likely to have more potential available for the G/E/NP sector whereas more rural service territories have less potential. The SWE's estimates of program potential supports this concern. Changing the target to 33% of the program potential in this sector creates an equitable target based on each EDC's unique opportunity.

B. Cost – Benefit Analysis Approval Process

1. Net-to-Gross Adjustment

a. The Commission Should Require EDCs to Include Only Gross TRC Ratios in Their EE&C Plans.

In the Tentative Order, the Commission continues the requirement that EDCs use net verified savings in the TRC test for program planning purposes and for compliance to be determined using gross verified savings. The Commission also proposed that EDCs include in their EE&C Plans net TRC ratios as well as gross TRC ratios. While the Companies support the process of using net verified savings in the TRC test for program planning purposes, and for compliance to be determined using gross verified savings, the Companies request that the Commission require the EDCs to only include gross TRC ratios in their EE&C Plans, and for net TRC ratios instead be included as part of the annual reports. As the Commission noted, net-to-gross ratios can vary significantly for a program from year to year. Including net TRC ratios in the EE&C Plans, especially given the proposed five-year term of Phase III, introduces information that is highly speculative and uncertain. Including net TRC ratios as part of the annual reports would provide stakeholders with the additional information sought by the Commission on a timely and relevant basis and would more likely provide meaningful information to support quality discussions.

C. Cost Recovery Tariff Mechanism

The Companies agree with the Commission's proposal for the wrap-up of Phase II costs. There should only be one surcharge to customers and the surcharge should include both the Phase II wrap up as well as any reconciliation, and the initial Phase III surcharge. However, the net over-recovered or under-recovered amount should not include interest, as this balance is tied to Phase II, and the Commission-approved tariff riders do not include interest.

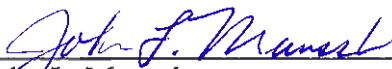
The Commission has proposed a Phase III surcharge that includes symmetrical interest at the legal rate of interest of 6%. In Phase I and II, the surcharge was developed using the authorized approved budgets for the plan. Going forward, the EDCs should be able to utilize a projected program cost estimate instead of the total approved budget amount. The Companies support this approach as it will reduce the amount of over-collection or under-recovery for the surcharge application period. As a result the impact of inclusion of an interest component will be decreased.

IV. CONCLUSION

Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company respectfully request that the Commission consider their comments in preparing for the design and implementation of a potential Phase III of the EE&C Program. The Companies appreciate the opportunity to comment and look forward to future continued collaboration on energy efficiency and conservation with the Commission and other stakeholders.

Respectfully submitted,

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ATTACHMENT 1: Discussion of Compliance and Uncertainty in EM&V and in Potential Estimates

The MPS and DRPS involves models and estimates of market potential and savings acquisition costs that involve high levels of uncertainty. While the studies estimate savings potential, the levels of uncertainty in any of the savings potential or acquisition cost estimates receive limited discussion.

Any estimate has an error band around it – and when models are involved the potential for compound errors (i.e., combining estimates, each of which has error bands) are significant. The savings potential estimates, as presented, represent a mid-point estimate of potential (or acquisition costs) implying a 50/50 chance the EDC targets are too high or too low.

Discussion of Compliance and Uncertainty in EM&V and in Potential Estimates

To demonstrate the points above, we have created 100,000 mock Act 129 compliance scenarios. Each of the scenarios have the following in common:

- There is a unique (that is, specifiable down to the fraction of a kWh) amount of achievable energy savings, (call it **X**), that corresponds to the portfolio budget.
- The exact magnitude of **X** is not knowable, but the potential is well estimated by the SWE as **X'** with a relative precision of $\pm 10\%$ the 90% confidence level. The $\pm 10\%$ uncertainty includes statistical and systematic components. So, there is a 90% chance that **X'** is within 10% of **X**.
- Through a good faith effort to comply with Act 129, the EDC achieves energy savings of **Y** kWh. As it happens, the achieved energy savings **Y** equal the true potential **X**

exactly: $Y=X$. *The EDC would be found compliant by any party that has perfect knowledge of both Y and X.*

- Through a good faith effort, the EDC evaluator measures the value of Y as Y' with a relative precision of $\pm 3\%$ the 90% confidence level (consistent with Act 129 sampling requirements over a five-year phase). The $\pm 3\%$ uncertainty includes statistical and systematic components. So, there is a 90% chance that Y' is within 3% of Y .

According to the above premises, the EDC is exactly compliant in each of the 100,000 scenarios. Moreover, it is not possible for the EDC to achieve even one more kWh of energy savings, given that the achieved savings Y are equal to the achievable potential X .

In Phase I, SWE acknowledged that the true achieved energy savings Y are not known exactly, but are approximated by EDC evaluators (audited and adjusted if needed by SWE) as Y' . Based on Act 129 sampling and evaluation requirements, Y' and Y will generally correspond. If an EDC was found to be short of a compliance goal, but close enough such that the difference is simply the measurement uncertainty of Y , then the SWE would not be able to conclude that the shortfall is strictly due to EDC underperformance. This is demonstrated in the Figure 1 below. The profile with dashed lines represents the likelihood of the verified savings being Y' , provided that the true savings are Y , which are exactly equal to the target X . The profile is centered around 100%, but there is a non-negligible likelihood that the EDC evaluator would measure that the EDC achieved say, 97% or 103% of the target. In this scenario, there is only a 5% chance that an EDC would be found to be out of compliance, even though the EDC was exactly compliant. Without recognition of the inherent uncertainty associated with sampling and gross impact evaluation, if

the EDC was exactly compliant ($X=Y$ in our discussion) the risk of “false non-compliance” would be 50%.²⁸

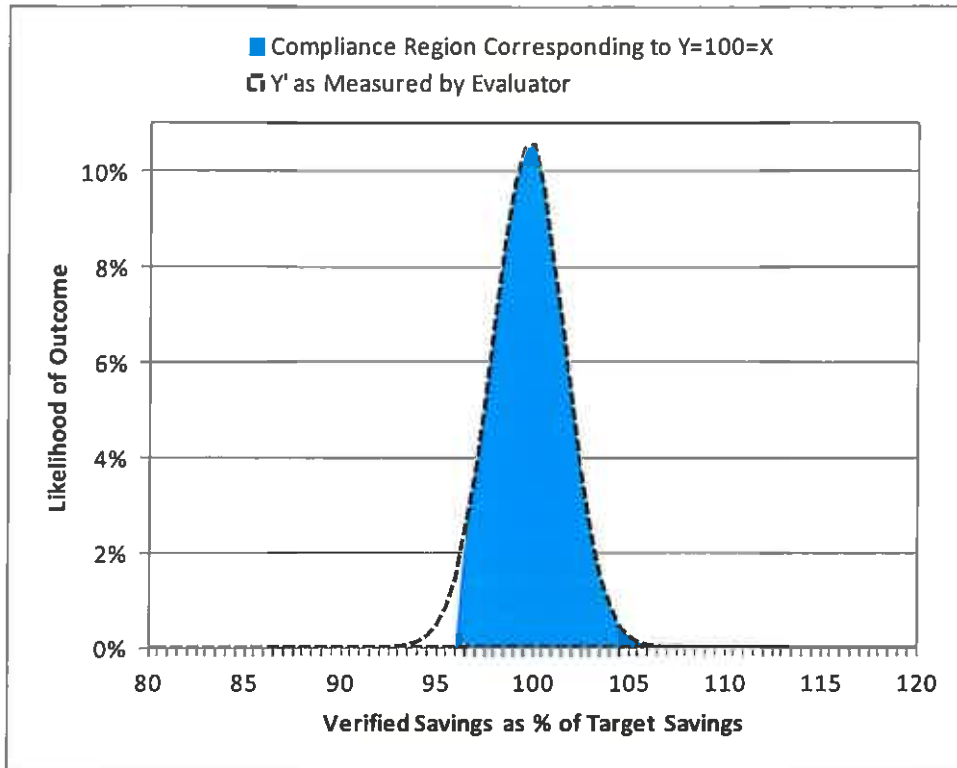


Figure 1. Results from 100,000 mock compliance scenarios. In each scenario, the EDC is exactly compliant, but in many cases the EDC may be found to be over-compliant or under-compliant due to measurement uncertainty in the impact evaluation process.

The Companies appreciate both the recognition of uncertainty in the evaluation process, and the practical solution proposed by SWE and adopted by the Commission. In Phase I, the Commission found Penn Power to be compliant with respect to the demand reduction target for the GNI sector because the verified demand reduction, within the 6% evaluation uncertainty, exceeded the Act 129 target.

²⁸Nexant, May 2 2012.

The Companies request that the Commission also recognize that the estimation of the achievable targets, as constrained by program funds, is subject to uncertainty. Act 129 impact evaluations are retrospective and are conducted annually according to the PA Evaluation Framework. The impact evaluation work products are independently audited by SWE. In contrast, the MPS is prospective, and is conducted once per phase, on a fraction of the budget afforded to impact evaluation. It is natural to expect that, through no lack of effort or competence, market potential estimations would have larger uncertainties than corresponding impact evaluations.

If the true market potential is actually less than the market potential that is estimated by SWE, then the EDCs may be found non-compliant, even if they actually achieved the true achievable potential that corresponds to available time and monetary resources in Phase III.

Figure 2 below shows the result of 200,000 mock Act 129 compliance scenarios. In each scenario, the EDC has achieved exactly the true achievable potential X . In Case 1 of the figure below, the value X is known with certainty. This results in exactly the same dynamics as discussed previously for Figure 1. In each scenario shown in Case 2 in Figure 2, the EDC also achieves a savings of Y the true achievable potential X . However, the verified impacts Y' can be above or below the target value of X' , which is set to correspond to 100 percent on the horizontal scale. In this scenario, the relationship between the measured savings Y' and the target savings X' is more complex, and includes the same 3% measurement uncertainty as in Case 1, and also a 10% uncertainty in the achievable potential estimation.²⁹ According to the precedent set by the Commission and by SWE in Phase I, EDCs may be found compliant if the impact evaluation achieves the necessary rigor and sampling requirements set forth in the Evaluation Framework,

²⁹ As discussed, it is expected that the market potential uncertainty is higher than the impact evaluation uncertainty. Based on a review of SWE baseline data and MPS methodology, ADM expects that the uncertainty for the achievable potential for any given EDC, assuming that salient issues raised in Company's comments are resolved, would be at least 10%. (ADM also believes that this is a fine achievement by SWE.)

and if the verified impacts exceed Act 129 targets, within the acceptable uncertainty associated with impact evaluation. In Figure 2 the blue shaded region corresponds to the compliance determination scheme in Phase I. However, it is important to remember that Figure 2 is constructed such that each scenario represent true and exact compliance, while the apparent over-compliance or under-compliance results only from estimation uncertainties associated with achievable potential and verified impacts. The green shaded region to the left of the blue shaded region and labeled as the “False Non-Compliance Zone”, includes cases where the EDC would be found non-compliant by the Phase I compliance proceedings, but would be found compliant if the Commission would acknowledge that there is some uncertainty in the market potential estimation process.³⁰ The likelihood of an exactly compliant EDC being in the “False Non-Compliance Zone” varies with the uncertainties in the evaluation and achievable potential estimation, but in this reasonable scenario is 25%.

The Companies request that, consistent with the logic of the Phase I compliance proceedings, the Commission adopt a compliance determination scheme that, 95 out of 100 times, would find an EDC that was *exactly compliant* (that is, $Y=X$) to be compliant.

Perhaps the simplest and most elegant way of implementing this would be to reduce the central estimate of the compliance target (e.g. 4,704,041 MWh at the statewide level) by half of the confidence interval of the estimate upon which the compliance target is based.³¹ Although ADM estimates the uncertainty to be at least 10%, but likely under 20%, the Companies trust that SWE would be able to provide a reliable quantitative estimate.

³⁰ Technically, all scenarios that appear to be non-compliant in Figure 2 are actually false cases of apparent non-compliance. However, the Companies recognize that the Commission must assign a value to the compliance target, and concede that a target value that would result in a 95% likelihood that an *exactly compliant* EDC (that is, actual savings equal the true but unknowable achievable potential) would be found to compliant in Act 129 proceedings.

³¹ It is not known whether this consideration also contributed to the Commission’s decision to increase acquisition costs relative to the initial central estimate from SWE’s Phase II MPS. If so, there may already be a precedent for this proposed solution.

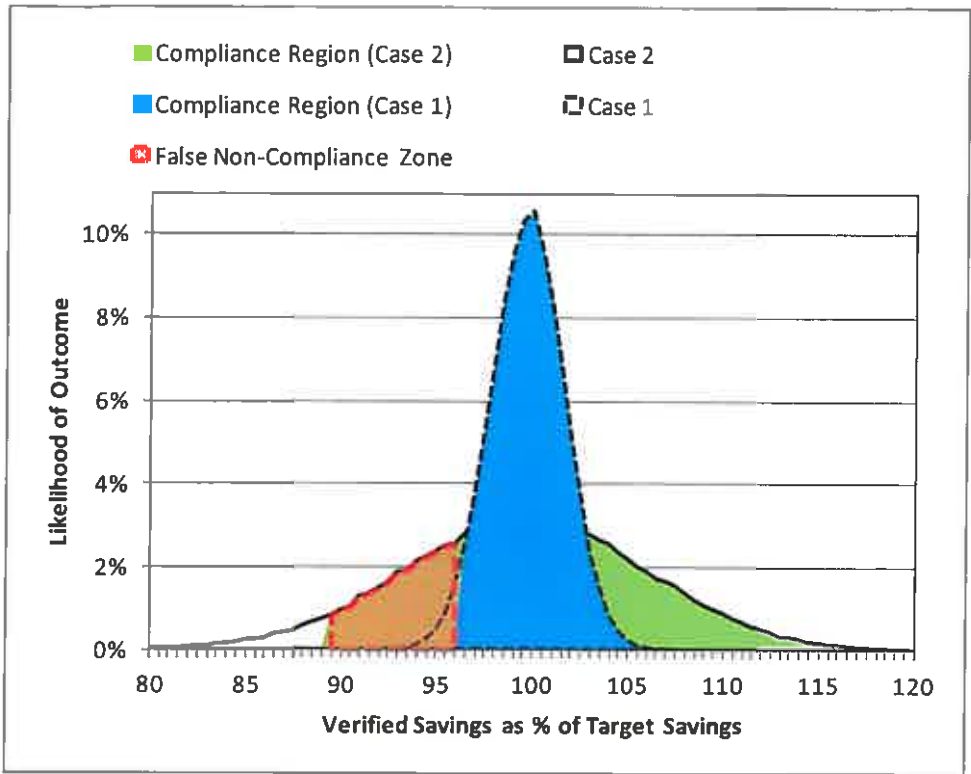


Figure 2 Results from 200,000 mock compliance scenarios. In each scenario in Case 1, the EDC is exactly compliant, but in many cases the EDC may be found to be over-compliant or under-compliant due to measurement uncertainty in the impact evaluation process. In each scenario in Case 2, the EDC is exactly compliant, but in many cases the EDC may be found to be over-compliant or under-compliant due to measurement uncertainty in the impact evaluation process, and also due to uncertainty in the achievable potential estimation process.