

Prepared for:

**Pennsylvania Public Utilities Commission**

2nd Addendum to 2015 SWE Market Potential Studies

**May 29, 2015**

**Application of Market Potential Study Results to Phase III Goals**

Prepared by:

**Statewide Evaluation Team**

# Introduction

The Statewide Evaluation (SWE) team completed two market potential studies (MPS) to assess demand-side management potential in Pennsylvania; energy efficiency (EE MPS) and demand response (DR MPS). A key purpose of these studies was to provide information to assist the Commission to establish the reduction targets for Phase III for the electric distribution companies (EDCs) subject to Act 129. The Commission issued a Tentative Implementation Order with consumption (MWh) and peak demand (MW) reduction targets for Phase III of Act 129 on March 11, 2015.

The Commission received a number of comments and reply comments from Act 129 stakeholders regarding the targets set forth in the Tentative Implementation Order. Several of the comments and proposed modifications persuaded the Commission to request the SWE to analyze program potential using revised assumptions and inputs. This memorandum focuses on the calculation mechanics and resulting modifications to Phase III targets. The policy rationale for considering and adopting these alternate Phase III targets is discussed in the Commission’s Final Phase III Implementation Order.

# Revised Demand Response Target for PECO

The SWE’s DR MPS found cost-effective demand response potential in each of the three program types considered: residential direct load control, small commercial direct load control, and C&I load curtailment. The acquisition cost ($/MW-year) for each DR program type is shown in Table 2‑1.

Table 2‑1: PECO DR Acquisition Cost by Program Type

|  |  |  |  |
| --- | --- | --- | --- |
| Program | 5-year MW | 5-year Cost | Acquisition Cost |
| Load Curtailment | 2,414 | $142,167,801 | $58,893 |
| Small Business DLC | 29 | $3,013,153 | $105,222 |
| Residential DLC | 392 | $36,960,776 | $94,300 |
| Total | **2,835** | **$182,141,730** | **$64,257** |

To arrive at the blended DR acquisition cost of $64,257/MW-year the SWE weighted the DR program acquisition costs by the amount of Phase III potential identified in the DR MPS. This approach was somewhat agnostic to program design and assumed PECO would design an EE&C plan to harvest potential at an equal rate from the three program types. In its comments on the Tentative Implementation Order PECO requested that the Commission reconsider this weighting methodology to allow sufficient allocation of funds to the DLC program types to enable PECO to continue operating its existing DLC infrastructure rather than abandoning it in favor of new Load Curtailment potential.

The Commission found PECO’s request reasonable and asked the SWE to recalculate PECO’s DR acquisition cost assuming no new DLC equipment would be installed, but that sufficient funding would be allocated to DLC to allow PECO to leverage the existing infrastructure. This required the SWE to revisit the acquisition costs from the DR MPS because the values shown in Table 2‑2 include operation of existing infrastructure and expansion of the program to new homes and businesses.

Table 2‑2 shows the SWE’s revised calculation of residential DLC acquisition cost for Phase III. Like the original DR MPS models, these costs are based on a $40/year incentive per condensing unit rather than the $80/year incentive proposed by PECO’s in its comments.

Table 2‑2: Residential DLC Acquisition Cost – No New Installations

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | 2016 | 2017 | 2018 | 2019 | 2020 | Phase III |
| EDC Costs | $3,631,040 | $3,673,785 | $3,737,709 | $3,802,745 | $3,868,913 | **$18,714,192** |
| Compliance kW Impact | 0 | 63,145 | 63,145 | 63,145 | 63,145 | **252,581** |
| PECO acquisition cost ($/kW-year) | **$74.09** |

Although attrition of customers is inevitable with a program of close to 90,000 homes, the calculations in Table 2‑2 assume that all existing customers will remain in the program through the end of Phase III. This assumption ensures that PECO will have sufficient residential DLC funds to maintain its existing infrastructure even if no customers leave the program. The kW reduction per device used in this calculation is unchanged from the DR MPS. However the SWE team reduced the annual “Implementation, Administration, Marketing” cost to reflect the fact that these costs are lowered significantly if new customers are not being recruited to the program. Based on PY5 actual expenditures, the SWE team assumed an annual cost of $286,040 in 2016 for this cost category with a small escalation factor for each subsequent program year.

It is also important to note that Table 2‑2 includes costs for the summer of 2016 (PY8) but no peak demand reductions toward a compliance goal. This is a function of the Commission’s directive that compliance be assessed over PY9-PY12 with no performance in PY8. The SWE does not believe it is practical for PECO to suspend its residential DLC program for a year because there is no Act 129 performance target. Instead we expect PECO will operate the program in a similar fashion as Phase II for PY8.

Table 2‑3 presents a similar table for PECO’s Small Commercial DLC program. The SWE’s revised calculations (with five years of cost and four years of kW impacts) produced a very similar acquisition cost to the observed costs and impacts PECO reported for its Smart AC Saver – Commercial Program in PY5. Consequently, the SWE carried the PY5 costs and impacts forward for Phase III and calculated the acquisition cost of $148.83 per compliance MW achieved.

Table 2‑3: Small Commercial DLC Acquisition Cost – No New Installations

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | 2016 | 2017 | 2018 | 2019 | 2020 | Phase III |
| EDC Costs | $314,000 | $317,696.45 | $321,436.42 | $325,220.41 | $329,048.95 | **$1,607,402** |
| Compliance kW Impact | 0 | 2,700 | 2,700 | 2,700 | 2,700 | **10,800** |
| PECO acquisition cost ($/kW-year) | **$148.83** |

Using the revised EDC costs from Table 2‑2 and Table 2‑3 and PECO’s Phase III DR budget allocation of $42,697,579, the SWE calculated a remaining Phase III budget of $22.376 million for C&I Load Curtailment. Using the Load Curtailment acquisition cost of $58,893/MW-year from the DR MPS, the SWE calculated a revised DR target of 161 MW for PECO. The calculations are shown below in Table 2‑4.

Table 2‑4: Updated PECO Phase III DR Target

|  |  |  |
| --- | --- | --- |
| Parameter | Phase III Spend | Compliance MW |
| PECO Phase III DR Budget | $ 42,697,579 | **Not Applicable** |
| Residential DLC | $ 18,714,192 | 63.1 |
| Commercial DLC Spend  | $ 1,607,402 | 2.7 |
| Remaining Funds for Load Curtailment | $ 22,375,985 | 95.0 |
| Updated PECO Phase III DR Target | **160.8** |
| Updated Acquisition Cost | **$66,370** |

# Revised Energy Efficiency Potential Savings Estimates

## Introduction and reason for modification

The Commission received several comments on the Tentative Implementation Order as well as during the April 8, 2015 Stakeholder Meeting related to the SWE energy efficiency potential study. Several comments expressed a concern regarding the assumed cost of low income measures/programs and included a common request to re-examine the acquisition cost and underlying modeling assumptions for the low income sector. The Commission found this request to be reasonable. Upon further review, the SWE Team determined that two modifications to the energy efficiency potential savings estimates were appropriate to address the concerns. The SWE Team made these modifications in order to more closely align the study’s assumptions with the historical program design and implementation practices of the EDCs in Pennsylvania in the low-income sector, as well as traditional low income programs in other jurisdictions.

## Modifications made

The first modification involved a change with respect to the savings and costs that were assumed for measures that apply to the low income sector. The original study assumed that retrofit installations such as weatherization measures (i.e. insulation, duct sealing, air sealing, etc.) would require full costs and would yield full savings. However, the study also assumed that for traditional replace on burnout (ROB)[[1]](#footnote-2) measures the savings and costs would be the same as those applied to the non-low income sector, with savings and costs calculated as the difference between the consumption and cost of a new standard unit and a new efficient unit. At the direction of the Commission, the SWE Team investigated the impact of changing the costs for these measures to full costs. This preliminary analysis found that an adjustment to the full costs of ROB measures targeting the low income sector would increase overall acquisition costs and ultimately reduce the overall statewide savings targets by approximately 3%.[[2]](#footnote-3)

In addition, in order to more completely account for modifying the costs of ROB measures targeting the low income sector, the SWE Team subsequently re-classified these measures as retrofit measures to more accurately capture the timing of replacement, and revised the savings assumptions so that the savings were calculated more consistent with costs, as the difference between the consumption of **an existing unit** (as opposed to a new standard unit) and **a new efficient unit**.

The second modification involved a change with respect to the non-incentive costs that were assumed for select measures targeting the low income sector. In the initial analysis, the SWE Team assumed non-incentive costs would not vary across the low income and non-low income sectors. However, the SWE Team determined that it was reasonable to assume a low income specific non-incentive cost (~$0.12/kWh) in select cases in order to more accurately estimate the program delivery cost of direct-install low income measures.[[3]](#footnote-4) This low income specific non-incentive cost adjustment only applied to measures that might require contractor installation, such as insulation, refrigerator replacement, HVAC equipment, etc. Other easy-to-install measures typically provided via giveaways or energy efficiency kits (CFL/LED bulbs, low flow devices, smart strips, etc.) retained the original non-incentive cost assumption.

The overall impact of these two modifications was a general increase in the overall acquisition cost for energy efficiency. In addition to a modest adjustment to the overall acquisition cost and overall program potential (all sectors), the modifications resulted in new estimates of potential in the residential sector.[[4]](#footnote-5)

## ****Revised Residential Achievable Potential****

Table 3‑1 provides the five-year achievable savings estimates by EDC as well as the total program expenses paid by the EDCs to realize the savings estimates, under the maximum and base achievable scenarios. This table is an update to Table 3-7 in the energy efficiency potential study. For the residential sector, the per first-year MWh acquisition cost is between $279/MWh in the maximum achievable scenario assuming 100% incentives for all measures, and $224/MWh in the base achievable scenario. The estimated EDC acquisition costs include both incentive costs as well as non-incentive costs to include marketing, incentive fulfillment, and EM&V.

Table 3‑1: Five-Year Residential Acquisition Costs (TRC) by Achievable Scenario by EDC

| **EDC** | **2016-2020 Program Costs ($Million)** | **2016-2020 Program Savings (MWh)** | **Acquisition Costs ($/1st-YR MWh Saved)** |
| --- | --- | --- | --- |
| **Maximum Achievable Scenario** |
| **Duquesne** | $227.4 | 780,024 | $291.50 |
| **FE: Met-Ed** | $238.9 | 912,181 | $261.94 |
| **FE: Penelec** | $242.6 | 815,324 | $297.50 |
| **FE: Penn Power** | $69.3 | 262,816 | $263.69 |
| **FE: West Penn** | $368.4 | 1,377,388 | $267.49 |
| **PECO** | $603.7 | 2,172,284 | $277.90 |
| **PPL** | $689.9 | 2,433,745 | $283.47 |
| ***Statewide*** | $2,440.2 | 8,753,762 | $278.76 |
| **Base Achievable Scenario** |
| **Duquesne** | $118.4 | 511,579 | $231.41 |
| **FE: Met-Ed** | $124.6 | 598,808 | $208.14 |
| **FE: Penelec** | $126.4 | 539,690 | $234.30 |
| **FE: Penn Power** | $36.9 | 172,563 | $214.04 |
| **FE: West Penn** | $195.2 | 900,329 | $216.76 |
| **PECO** | $319.4 | 1,420,082 | $224.91 |
| **PPL** | $364.6 | 1,590,830 | $229.19 |
| ***Statewide*** | $1,285.5 | 5,733,881 | $224.20 |

# Revised Energy Efficiency and Demand Response Targets

The revisions made to the residential sector energy efficiency potential estimates which affect the low income sector have an impact on the overall savings estimates across all sectors. The revised energy efficiency potential estimates spanning all sectors are summarized described below.

Act 129 of 2008 imposed an annual spending limit of 2% of 2006 revenues for each EDC. The SWE’s EE MPS examined program potential assuming that the entire 2% funding allocation would be devoted to energy efficiency. These program potential estimates are presented in Table 4‑1 along with the SWE’s technical, economic, achievable and program estimates of energy efficiency potential. This table is an update of Table 1 from the Addendum to the Tentative Implementation Order[[5]](#footnote-6). The data has been updated to reflect the revisions discussed herein.

Table 4‑1: Statewide Summary of Potential Savings and Costs by Scenario by Year

|  | **2016** | **2017** | **2018** | **2019** | **2020** | **2025** |
| --- | --- | --- | --- | --- | --- | --- |
| **Cumulative Savings Potential – MWh** |
| **Technical** | 6,856,302 | 13,310,086 | 19,406,488 | 24,869,797 | 26,052,612 | 42,354,789 |
| **Economic** | 4,954,738 | 9,518,150 | 13,861,124 | 17,865,995 | 17,536,733 | 27,359,654 |
| **Maximum Achievable** | 2,782,510 | 5,489,706 | 8,215,325 | 10,872,575 | 11,104,047 | 19,574,030 |
| **Base Achievable** | 1,627,032 | 3,320,053 | 5,034,256 | 6,713,044 | 6,824,087 | 12,240,394 |
| **Program** | 1,137,214 | 2,318,207 | 3,513,107 | 4,681,225 | 4,760,791 | - |
| **Cumulative Savings Potential - % of 2010 Load** |
| **Maximum Achievable** | 1.9% | 3.7% | 5.6% | 7.4% | 7.6% | 13.3% |
| **Base Achievable** | 1.1% | 2.3% | 3.4% | 4.6% | 4.7% | 8.3% |
| **Program**  | 0.8% | 1.6% | 2.4% | 3.2% | 3.2% | - |
| **Incremental Savings Potential – MWh** |
| **Maximum Achievable** | 2,782,510 | 2,889,289 | 3,012,667 | 3,128,900 | 2,636,678 | 2,604,979 |
| **Base Achievable** | 1,627,032 | 1,741,083 | 1,852,286 | 1,958,936 | 1,679,885 | 1,806,646 |
| **Program**  | 1,137,213 | 1,215,139 | 1,292,348 | 1,366,397 | 1,172,118 | - |
| **Incremental Savings Potential - % of 2010 Load** |
| **Maximum Achievable** | 1.9% | 2.0% | 2.1% | 2.1% | 1.8% | 1.8% |
| **Base Achievable** | 1.1% | 1.2% | 1.3% | 1.3% | 1.1% | 1.2% |
| **Program**  | **0.8%** | **0.8%** | **0.9%** | **0.9%** | **0.8%** | **-** |
| **EDC Program Costs - Million $** |
| **Maximum Achievable** | $619.7 | $643.2 | $664.8 | $687.0 | $662.5 | $704.1 |
| **Base Achievable** | $326.3 | $341.9 | $356.5 | $371.5 | $358.3 | $393.9 |
| **Program**  | **$227.4** | **$238.2** | **$248.4** | **$258.8** | **$249.7** | **n/a\*-** |
| *\*Program potential was only estimated for five years to be consistent with a Phase III of Act 129. Program potential in 2025 would be part of Phase IV of Act 129* |

Table 4‑2 is an update to Table 2 from the Addendum to the Tentative Implementation Order. The data in Table 4‑2 has been updated to reflect the revisions discussed herein, and shows the SWE’s estimates of incremental annual program potential savings for each EDC in the Commonwealth of Pennsylvania assuming 100% spending on energy efficiency.

Table 4‑2: Five-Year Program Potential Savings and Budget by EDC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Portfolio Spending Ceiling (Million $) | Program Acquisition Costs ($/1st-YR MWh Saved) | 2016-2020 Potential Savings (MWh) | % of 2010 Forecast |
| 2016-2020 – Five-Year Program Potential |
| Duquesne | $97.7  | $199.5 | 489,907  | 3.5% |
| FE: Met-Ed | $124.3  | $190.9 | 651,470  | 4.4% |
| FE: Penelec | $114.9  | $202.9 | 566,168  | 3.9% |
| FE: Penn Power | $33.3  | $190.4 | 174,857  | 3.7% |
| FE: West Penn | $117.8  | $196.0 | 601,096  | 2.9% |
| PECO | $427.0  | $195.8 | 2,180,732  | 5.5% |
| PPL | $307.5  | $202.4 | 1,518,985  | 4.0% |
| *Statewide* | **$1,222.5**  | **$197.7** | **6,183,214**  | **4.2%** |

The SWE’s DR MPS examined demand response program potential beyond projections of PJM commitments informed by historical participation assuming 10%, 15%, and 20% budget allocation to demand response. The results of this “Business as Usual” scenario are presented in Table 4‑3. The values marked with an “\*” indicate that the EDC’s demand response potential (as opposed to budget) is the constraining factor in the scenario. This table is an update to Table 3 from the Addendum to the Tentative Implementation Order.

Table 4‑3: Phase III DR Program Potential – Net of Projected PJM Commitments

| EDC | 5-Year DR Spending Ceiling (Million $) | Program Acquisition Costs ($/MW/year) | Average Annual Potential Savings (MW) | % Reduction Relative to 2007-2008 Peak Demand |
| --- | --- | --- | --- | --- |
| 2016-2020 – 10% DR Spending |  |
| Duquesne | $9.8 | $57,976  | 34 | 1.3% |
| FE: Met-Ed | $12.4 | $51,210  | 49 | 1.8% |
| FE: Penelec | $11.5 | $50,782  | 0\* | 0.0% |
| FE: Penn Power | $3.3 | $49,349  | 13 | 1.4% |
| FE: WPP | $11.8 | $46,203  | 51 | 1.5% |
| PECO | $42.7 | $66,370  | 129 | 1.6% |
| PPL | $30.8 | $41,622  | 95\* | 1.4% |
| Statewide | **$122.3** | **$53,876** | **370** | **1.4%** |
| 2016-2020 – 15% DR Spending |  |
| Duquesne | $14.7 | $57,976  | 51 | 2.0% |
| FE: Met-Ed | $18.7 | $51,210  | 50\* | 1.9% |
| FE: Penelec | $17.2 | $50,782  | 0\* | 0.0% |
| FE: Penn Power | $5.0 | $49,349  | 20 | 2.1% |
| FE: WPP | $17.7 | $46,203  | 76 | 2.2% |
| PECO | $64.0 | $66,370  | 193 | 2.4% |
| PPL | $46.1 | $41,622  | 95\* | 1.4% |
| Statewide | **$183.4** | **$55,200** | **485** | **1.8%** |
| 2016-2020 – 20% DR Spending |  |
| Duquesne | $19.5 | $57,976  | 67 | 2.7% |
| FE: Met-Ed | $24.9 | $51,210  | 50\* | 1.9% |
| FE: Penelec | $23.0 | $50,782  | 0\* | 0.0% |
| FE: Penn Power | $6.7 | $49,349  | 27 | 2.8% |
| FE: WPP | $23.6 | $46,203  | 102 | 2.9% |
| PECO | $85.4 | $66,370  | 257 | 3.3% |
| PPL | $61.5 | $41,622  | 95\* | 1.4% |
| Statewide | **$244.5** | **$56,029** | **599** | **2.3%** |

## ****Application of Findings to Phase III Goals****

Based on the findings of the SWE potential studies, stakeholder input, and policy considerations the Commission requested the SWE Team to calculate energy efficiency potential assuming a 90% funding allocation to EE and a 10% funding allocation to DR. However, Penelec, Met-Ed, and PPL would be unable to spend 10% of Act 129 funds on DR because of a lack of cost-effective DR potential in their service territory.

Table 4‑4: Budget Allocation by EDC

|  |  |  |
| --- | --- | --- |
| EDC | % of Total Spending on EE | % of Total Spending on DR |
| Duquesne | 90% | 10% |
| FE: Met-Ed | 92% | 8% |
| FE: Penelec | 100% | 0% |
| FE: Penn Power | 90% | 10% |
| FE: WPP | 90% | 10% |
| PECO | 90% | 10% |
| PPL | 95% | 5% |

Table 4‑5 presents a modified version of the information shown in Table 4‑1 (and is an update to Table 5 from the Addendum to the Tentative Implementation Order). The cumulative savings potential estimates have been removed and program potential estimates have been modified to reflect the energy efficiency spending allocations in Table 4‑4. The estimates of achievable potential are unaltered.

Table 4‑5: Statewide Summary of Potential EE Savings and Costs by Scenario and Year Based on Funding Allocation

|  | **2016** | **2017** | **2018** | **2019** | **2020** | **2025** |
| --- | --- | --- | --- | --- | --- | --- |
| **Incremental Annual Savings Potential - MWh** |
| **Maximum Achievable** | 2,782,510 | 2,889,289 | 3,012,667 | 3,128,900 | 2,636,678 | 2,604,979 |
| **Base Achievable** | 1,627,032 | 1,741,083 | 1,852,286 | 1,958,936 | 1,679,885 | 1,806,646 |
| **Program**  | 1,050,108 | 1,122,237 | 1,193,543 | 1,261,924 | 1,082,676 | - |
| **Incremental Annual Savings Potential - % of 2010 Load** |
| **Maximum Achievable** | 1.9% | 2.0% | 2.1% | 2.1% | 1.8% | 1.8% |
| **Base Achievable** | 1.1% | 1.2% | 1.3% | 1.3% | 1.1% | 1.2% |
| **Program**  | **0.7%** | **0.8%** | **0.8%** | **0.9%** | **0.7%** | **-** |
| **EDC Program Costs - Million $** |
| **Maximum Achievable** | $619.7 | $643.2 | $664.8 | $687.0 | $662.5 | $704.1 |
| **Base Achievable** | $326.3 | $341.9 | $356.5 | $371.5 | $358.3 | $393.9 |
| **Program**  | **$210.0** | **$220.0** | **$229.4** | **$239.1** | **$230.7** | **-** |
| \*Program potential was only estimated for five years to be consistent with a Phase III of Act 129. Program potential in 2025 would be part of Phase IV of Act 129 |

The decision to allocate less than 100% of the available funding to energy efficiency means that the program potential estimates for energy efficiency are lowered by a proportional amount. Table 4‑6 presents estimates of the sum of 2016 – 2020 incremental annual program potential savings at these reduced EE budget amounts[[6]](#footnote-7) (and is an update to Table 6 from the Addendum to the Tentative Implementation Order).

Table 4‑6: Modified Five-Year Energy Efficiency Program Potential Savings and Budget by EDC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **EDC** | **Portfolio EE Spending Ceiling (Million $)** | **Program Acquisition Costs ($/1st-YR MWh Saved)** | **2016-2020 EE Potential Savings[[7]](#footnote-8) (MWh)** | **% of 2010 Forecast** |
| **2016-2020 – Five-Year EE Program Potential** |
| **Duquesne** | $88.0  | $199.5 | 440,916  | 3.1% |
| **FE: Met-Ed** | $114.4  | $190.9 | 599,352  | 4.0% |
| **FE: Penelec** | $114.9  | $202.9 | 566,168  | 3.9% |
| **FE: Penn Power** | $30.0  | $190.4 | 157,371  | 3.3% |
| **FE: WPP** | $106.0  | $196.0 | 540,986  | 2.6% |
| **PECO** | $384.3  | $195.8 | 1,962,659  | 5.0% |
| **PPL** | $292.1  | $202.4 | 1,443,035  | 3.8% |
| **Statewide** | **$1,129.6**  | **$197.8** | **5,710,488**  | **3.9%** |

Table 4‑7 presents modified DR program potential estimates based on the EDC-specific budget allocations shown in Table 4‑4 (and is an update to Table 7 from the Addendum to the Tentative Implementation Order). Table 4‑7 also reflects the direction to assume no demand response events will be called during the summer of 2016. Dividing the available budget by four years instead of five years increases the average annual program potential estimates relative to what was presented in Table 4‑3 for those EDCs receiving a 10% DR spending allocation.

**Table 4‑7: Modified Phase III DR Program Potential – Net of Projected PJM Commitments**

| **EDC** | **5-Year DR Spending Allocation (Million $)** | **Program Acquisition Costs ($/MW/year)** | **Average Annual Potential Savings (MW)** | **% Reduction (Relative to 2007-2008 Peak Demand)** |
| --- | --- | --- | --- | --- |
| **2016-2020 – 10% DR Spending Allocation Except Where Noted by Asterisk** |  |
| **Duquesne** | $9.77 | $57,976 | 42 | 1.7% |
| **\*FE: Met-Ed** | $9.95 | $51,210 | 49 | 1.8% |
| **\*FE: Penelec** | $0.00 | $50,782 | 0 | 0.0% |
| **FE: Penn Power** | $3.33 | $49,349 | 17 | 1.7% |
| **FE: WPP** | $11.78 | $46,203 | 64 | 1.8% |
| **PECO** | $42.70 | $66,370 | 161 | 2.0% |
| **\*PPL** | $15.38 | $41,622 | 92 | 1.4% |
| **Statewide** | **$92.90** | **$54,714** | **424** | **1.6%** |

## ****GNI and Low Income Carve-Outs****

Phase II of Act 129 has specific targets for two “carve-out” sectors: residential low income and government, nonprofit and institutional (GNI). This report addendum provides the Commission with additional detail on the GNI and residential low income carve-outs relative to program potential.

The GNI “carve-out” sector is comprised of various market segments analyzed in the energy efficiency market potential study including education, healthcare, government/public service, public street lighting and other institutional buildings. Table 4‑8 provides the GNI carve-outs by EDC associated with the five-year program potential estimated in the EE MPS (and is an update to Table 8 from the Addendum to the Tentative Implementation Order). It is important to note that Table 4‑8 maintains the default 90%/10% annual funding allocation for EE versus DR for Duquesne, Penn Power, West Penn Power and PECO. The three utilities marked with an “\*” in Table 4‑8 below have slightly different EE versus DR funding allocations, as discussed in Section II above.

Table 4‑8: Commercial GNI Sector 2016 to 2020 1st Year Program Potential Savings by EDC

| **EDC** | **2016-2020 Incremental Annual Program Potential Savings (MWh)[[8]](#footnote-9)** | **% of Commercial Savings** | **% of Total Portfolio Savings** |
| --- | --- | --- | --- |
| **2016-2020 – 90% EE Spending Except Where Noted by Asterisk** |
| **Duquesne** | 44,954 | 33.9% | 10.2% |
| **\*FE: Met-Ed** | 20,913 | 25.7% | 3.5% |
| **\*FE: Penelec** | 32,689 | 33.6% | 5.8% |
| **FE: Penn Power** | 6,103 | 22.7% | 3.9% |
| **FE: WPP** | 25,831 | 31.6% | 4.8% |
| **PECO** | 179,031 | 33.3% | 9.1% |
| **\*PPL** | 84,230 | 27.3% | 5.8% |
| **Statewide** | **393,752** | **31.1%** | **6.9%** |

Table 4‑9 provides the additional detail regarding the low income carve-outs by EDC associated with the updated five-year program potential estimated in this addendum. This table is an update to Table 9 of the Addendum to the Tentative Implementation Order, but includes only the potential associated with low income specific measures and excludes savings attributed to low income participants in non-low income-specific programs.

Table 4‑9: Residential Low income Sector 2016 to 2020 1st Year Program Potential Savings by EDC

| **EDC** | **2016-2020 Incremental Annual Program Potential Savings (MWh)[[9]](#footnote-10)** | **% of Residential Savings** | **% of Total Portfolio Savings** |
| --- | --- | --- | --- |
| **2016-2020 – 90% EE Spending Except Where Noted by Asterisk** |
| **Duquesne** | 44,652 | 17% | 10.1% |
| **\*FE: Met-Ed** | 56,286 | 14% | 9.4% |
| **\*FE: Penelec** | 62,332 | 18% | 11.0% |
| **FE: Penn Power** | 19,568 | 19% | 12.4% |
| **FE: WPP** | 67,712 | 18% | 12.5% |
| **PECO** | 189,939 | 16% | 9.7% |
| **\*PPL** | 163,449 | 17% | 11.3% |
| **Statewide** | **603,937** | **16%** | **10.6%** |

1. A DSM measure is not implemented until the existing technology it is replacing fails or burns out. An example would be an energy efficient water heater being purchased after the failure of the existing water heater at the end of its useful life. [↑](#footnote-ref-2)
2. *Act 129 SWE EE Potential Study 4/8/15 Data Request Response*. This response included a brief discussion of the analysis discussed above. [↑](#footnote-ref-3)
3. The updated non-incentive was derived as the average reported cost to deliver direct install programs among investor-owned utilities in North American between 2012 and 2015. The SWE used E-Source’s DSM Insights tool to extract non-incentive cost data. [↑](#footnote-ref-4)
4. There were no changes to technical, economic, and achievable energy efficiency potential in the commercial and industrial sectors as a result of these modifications. [↑](#footnote-ref-5)
5. Application of Market Potential Study Results to Phase III Goals – Addendum to 2015 SWE Market Potential Studies, submitted by GDS Associates, Inc., et al., February 23, 2015. [↑](#footnote-ref-6)
6. Penelec’s energy efficiency budget is not reduced between Table 4‑2 and Table 4‑6 because 100% of the budget is allocated to EE. [↑](#footnote-ref-7)
7. Phase III program potential reflects the 5-year sum of incremental annual savings from June 1, 2016 through May 31, 2021. [↑](#footnote-ref-8)
8. Phase III program potential reflects the 5-year sum of incremental annual savings from June 1, 2016 through May 31, 2021. [↑](#footnote-ref-9)
9. ibid [↑](#footnote-ref-10)