Template for Pennsylvania EDC Energy Efficiency and Conservation Plans

To be submitted by EDCs by November 30, 2015

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Note: If any of your answers require you to disclose what you believe to be privileged or confidential information, not otherwise available to the public, you should designate at each point in the EE&C Plan that the answer requires you to disclose privileged and confidential information. Explain briefly why the information should be treated as confidential. You should then submit the information on documents stamped "CONFIDENTIAL" at the top in clear and conspicuous letters and submit one copy of the information under seal to the Secretary's Office along with the EE&C Plan. In addition, an expunged copy of the filing should also be included with the EE&C Plan. If someone

requests to examine the information, or if Commission staff believes that the proprietary claim is frivolous or otherwise not justified, the Secretary's Bureau will issue a Secretarial Letter directing that the EDC file a petition for protective order pursuant to 52 Pa. Code § 5.423.

Energy Efficiency and Conservation Plan

A. Transmittal Letter - with reference to statutory and regulatory requirements and Electric Distribution Company (EDC) contact that PA PUC should contact for more information.

B. Table of Contents - including lists of tables and figures.

1. Overview of Plan

(The objective of this section is to provide an overview of the entire plan)

1.1. Summary description of plan, plan objectives, and overall strategy to achieve energy efficiency and conservation goals.

Pursuant to Act 129 of 2008 ("Act 129"), the Pennsylvania General Assembly charged the Pennsylvania Public Utility Commission ("PUC" or "Commission") with establishing an energy efficiency and conservation program. The energy efficiency and conservation program requires each electric distribution company ("EDC") with at least 100,000 customers to adopt a plan to reduce energy demand and consumption within its service territory. In response to Act 129, on January 16, 2009, the Commission entered an Implementation Order at Docket No. M-2008-2069887 which was utilized in Phase I program planning. On August 3, 2012, the Commission entered an Implementation Order at Docket Nos. M-2012-2289411 and M-2008-2069887 for Phase II program planning. On June 11, 2015, the Commission entered an Implementation Order at Docket No. M-2014-2424864 for Phase III program planning along with a Clarification Order issued on August 20, 2015. The Act requires that by November 30, 2013, and a least every five years thereafter, the Commission shall evaluate the costs and benefits of the program. Based upon findings of the Statewide Evaluator (SWE) contained in its Market Potential Study[1], the Commission determines that the benefits of a Phase III Act 129 program will exceed the costs and therefore proposes to adopt additional required incremental reductions in consumption for another Energy Efficiency and Conservation Plan ("EE&C" or "Plan") program term.

In the June 11, 2015 Implementation Order, the Commission adopted the percentage reduction targets recommended by the SWE. Duquesne Light Company's ("Duquesne Light" or "Duquesne" or the "Company"), energy consumption reduction target for the Phase III five-year energy efficiency consumption is 440,916 MWh and demand reduction target is 42 MW. In compliance with the requirements of Act 129 and PUC Orders, Duquesne has used the energy consumption and demand reductions established by the Commission to develop its energy efficiency and conservation plan, which is submitted herewith.

[1] Electric Energy Efficiency Potential For Pennsylvania, GDS Associates, Inc, May 10, 2012; Pennsylvania Statewide Residential End-Use and Saturation Study, GDS Associates, Inc, April 18,2012; 2014 Pennsylvania Statewide Act 129 Residential Baseline Study April 2014; Pennsylvania Statewide Act 129 Non-Residential End Use & Saturation Study April 2014; Act 129 Statewide Evaluator Demand Response Potential for Pennsylvania February 2015; Act 129 Statewide Evaluator Energy Efficiency Potential Study February 2015.

To support EE&C program planning for Phase III of the Plan, the Company reviewed the EE&C potential in the Duquesne Light service territory for a cross-section of customer segments comprising the major rate classes. In addition, review of the participation in the Phase I and Phase II activities was performed. Once the EE&C review was complete, particular measures were selected for each customer segment based on numerous factors, as described in the detailed sections of the Plan that follow this summary. In essence, this planning process made extensive use of benchmarking data and drew heavily on the Phase II Program Year (PY) 5 and 6 performances as well as stakeholders input during the multiple stakeholders meetings held by Duquesne Light during the planning of the Phase III EE&C Plan. The valuable lessons learned about what has been effective elsewhere were applied to the specific information relative to Duquesne Light's customers. The Company then made decisions to include or exclude particular EE&C measures within its plan to achieve the mandated reductions in cost-effective ways that are consistent with customer interests.

1.2. Summary description of process used to develop the EE&C plan and key assumptions used in preparing the plan.

Duquesne Light's Phase III EE&C Plan development process employed a "bottoms-up" approach comprised of a sequence of four task areas. A summary of these tasks are provided below:

1) Measure content and projected mix

Phase III Plan is built upon the Phase II PY 5-6 record of program performance. The initial measure mix was established based on the previous two years of measure activity. This was modified incorporating measures that were popular but treated as custom measures in Phase II. Next, Plan measure content was reconciled with content of the 2016 Technical Reference Manual (TRM) and information provided in the SWE saturation studies and potential forecast (2015 Statewide EE Potential Study).[2]

2) Measure savings impact, cost and benefit

Measure deemed savings were updated consistent with the 2016 TRM. Measure costs were documented, referenced to California Public Utilities Commission Database of Energy Efficient Resources (DEER), the SWE incremental costs database[3], invoice data from PY 5-6 and specific measure cost research. Incentive amounts were established starting with baseline assumptions applied in the 2015 Statewide EE Potential Study. These were adjusted based upon historic incentives provided by Duquesne Light, the other six Pennsylvania EDCs, escalated for the Phase III performance period and adjusted as required to achieve budgetary requirements. Avoided cost assumptions were updated consistent with the Total Resource Cost Test (TRC) Order[4] and applied to render measure, program, portfolio and Plan level cost-effectiveness as expressed by the TRC ratio.

[2] Energy Efficiency Potential Study for Pennsylvania, GDS, February 2015
[3] Ibid.
[4] PA PUC 2016 Total Resource Cost Test Order, June 11, 2015, at Docket No. M-2015-2468992

3) Program definition

PY 5-6 program performance as well as customer participant feedback supported retention of many Phase I and Phase II programs. Residential sector programs retain the successful downstream and upstream rebate offerings, but are expanded to include a new Savings by Design (new construction) program. The Commercial and Industrial portfolios retain proven customer market segment engagement channels. The Small Commercial Direct-Install Program and Multifamily Housing Retrofit Program were both successful in Phase II and are continued in Phase III. Such programs demonstrate Duquesne Light's commitment to providing comprehensive measures to under-served market segments. The Phase III EE&C Plan also places an emphasis on expanded and aggressive governmental/educational/non-profit programs through Duquesne Light's Public Agency Partnership Program.

4) Portfolio/Program Goals and Funding

Program goal allocation and associated program budgets were adjusted to accommodate the Commission's Implementation Order and Clarification Order, which required segment carve-outs for the low income and governmental/educational/non-profit segments and specified program comprehensiveness requirements.[5] Goal allocation for the remaining customer segments was based on segment energy use, previous delivery channel strengths and weaknesses, as well as requirements to achieve mandated reductions at authorized budgets.

1.3. Summary tables of portfolio savings goals, budget and cost-effectiveness (see Section 11 Tables 1a, 1b, 2, and 3).[6]

1.4. Summary of program implementation schedule over five-year plan period (see Section 12 Chart 1 Notes).

Residential Sector: Pursuant to the Commission's Implementation Order for Phase III program planning and discussions held at Stakeholder Meetings, Duquesne Light developed plans to launch six programs targeting the residential sector: a low income program; a residential rebate program including upstream components; a whole house retrofit program; a home energy reporting program; a residential appliance recycling program, and new construction program. The low income program will leverage the public agency partnership program operated during Phase I and Phase II (described below). Duquesne Light will complete contract negotiations with specialized implementation CSPs following the Request for Proposal (RFP) process for programs identified in Figure 2: Program Implementation Responsibility. Duquesne Light has been actively meeting with stakeholders to gain input on the Phase III EE&C Plan. It will continue soliciting stakeholder input as needed, to discuss the status of the program and issues on a semi-annual basis until May 31, 2020, unless otherwise ordered by the Commission.

[5] Ibid.
[6] Tables referenced in the template are found in Section 11.

Commercial Sector: Pursuant to the Commission's Implementation Order for Phase III program planning and discussions held at multiple Stakeholder Meetings, Duquesne Light developed plans to launch seven programs targeting the commercial sector: The Express Efficiency Program, Small Commercial Direct-Install Program, Small Non-Residential Upstream Lighting Program, Large Non-Residential Upstream Lighting Program and Multifamily Housing Retrofit Programs specifically catering to the small C&I customer sectors. The Commercial Efficiency Program and Large Non-Residential Upstream Lighting Program will engage the large C&I customers. The Commercial Efficiency Program will employ proven market segment engagement channels focusing on office buildings and retail centers. Duquesne Light has been actively meeting with stakeholders to gain input on the Phase III EE&C Plan. It will continue soliciting stakeholder input as needed, to discuss the status of the program and issues on a semi-annually basis until May 31, 2020, unless otherwise ordered by the Commission.

Industrial Sector: The Industrial Efficiency Program will employ proven primary metals and chemical products engagement channels. Duquesne Light will complete contract negotiations with CSPs following a Request for Proposal (RFP) process for each of the new programs included in Phase III as described in Figure 2. All industrial sector customers, not just primary metals and chemical products customers, can receive energy efficiency incentives under the Industrial Efficiency Program. Duquesne Light has been actively meeting with stakeholders to gain input on the Phase III EE&C Plan. It will continue soliciting stakeholder input as needed, to discuss the status of the program and issues on a semi-annually basis until May 31, 2020, unless otherwise ordered by the Commission.

Governmental/Educational/Non-Profit Sector Programs: Duquesne Light plans an expanded effort to engage this sector and will focus on governmental infrastructure, such as water and wastewater operations, centrally located district plants and the region's expansive primary, secondary and higher education institutions. Duquesne Light began working directly with regional local governments shortly after the first Act 129 Stakeholder meetings in 2009 to tailor EE&C programs and meet the segment's specific needs. Efforts to outreach and engage this sector began early-on in Phase I and continued in Phase II. Duquesne Light executed memoranda of understanding with several key local public agencies and identified project areas for EE&C services. As efficiency gain "low hanging fruit" evaporate due to previous program activities and evolving minimum federal efficiency standards, Duquesne Light will leverage these early relationships to pursue deeper penetration into these important markets.

In Phase III a new Community Education Program will be added under this sector. The program will educate middle-school and high school students about energy efficiency and train them to perform energy efficiency audits first, at their schools, and later into the broader community.

1.5. Summary description of the EDC implementation strategy to acquire at least 15% of its consumption reduction target in each program year.

Duquesne Light's Phase III EE&C Plan includes programs that are being continued as previously implemented, modified based on previous years' experience implementing them, and newly added programs. These programs have forecast "ramp-rates"

projecting estimated saving impacts across the five-year Phase III performance period as shown in Figure 1: Program Ramp-Rates. As shown on the bottom line of ramp-rate table, the Plan provides for acquiring at least 15% of the consumption target in each of the Phase III program years.

Figure 1: Program Ramp-Rates

Program Year	2016	2017	2018	2019	2020	Total
Residential						
Residential Efficiency	40%	30%	15%	10%	5%	100%
Appliance Recycling	10%	20%	20%	25%	25%	100%
Home Energy Reports	10%	15%	25%	25%	25%	100%
Whole House Audit /Retrofit	5%	15%	20%	30%	30%	100%
Savings by Design (New Construction)	5%	15%	20%	30%	30%	100%
Low Income	9%	15%	23%	26%	27%	100%
Small C&I						
Express Efficiency	20%	20%	20%	20%	20%	100%
Small Nonres Upstream Ltg	5%	15%	20%	30%	30%	100%
SCDI	5%	15%	20%	30%	30%	100%
Multifamily	10%	15%	20%	25%	30%	100%
Large C&I						
Commercial Efficiency	20%	20%	20%	20%	20%	100%
Large Nonres Upstream Ltg	5%	15%	20%	30%	30%	100%
Industrial Efficiency	20%	20%	20%	20%	20%	100%
Governmental/Educational/Non-Profit						
PAPP	10%	25%	25%	25%	15%	100%
Community Education	5%	15%	20%	30%	30%	100%
Total Portfolio	19%	21%	20%	21%	19%	100%

1.6. Summary description of the EDC implementation strategy to manage EE&C portfolios and engage customers and trade allies.

Duquesne Light implements programs in an effective and economical manner by balancing utility resources with contracted resources. More specifically, contractors and subcontractors with expertise and experience in program implementation and operations are deployed under agreements with Duquesne Light. Management responsibility for meeting goals still rests with Duquesne Light, working in concert with contractors and subcontractors as outlined in the table below.

Figure 2: Program Implementation Responsibility

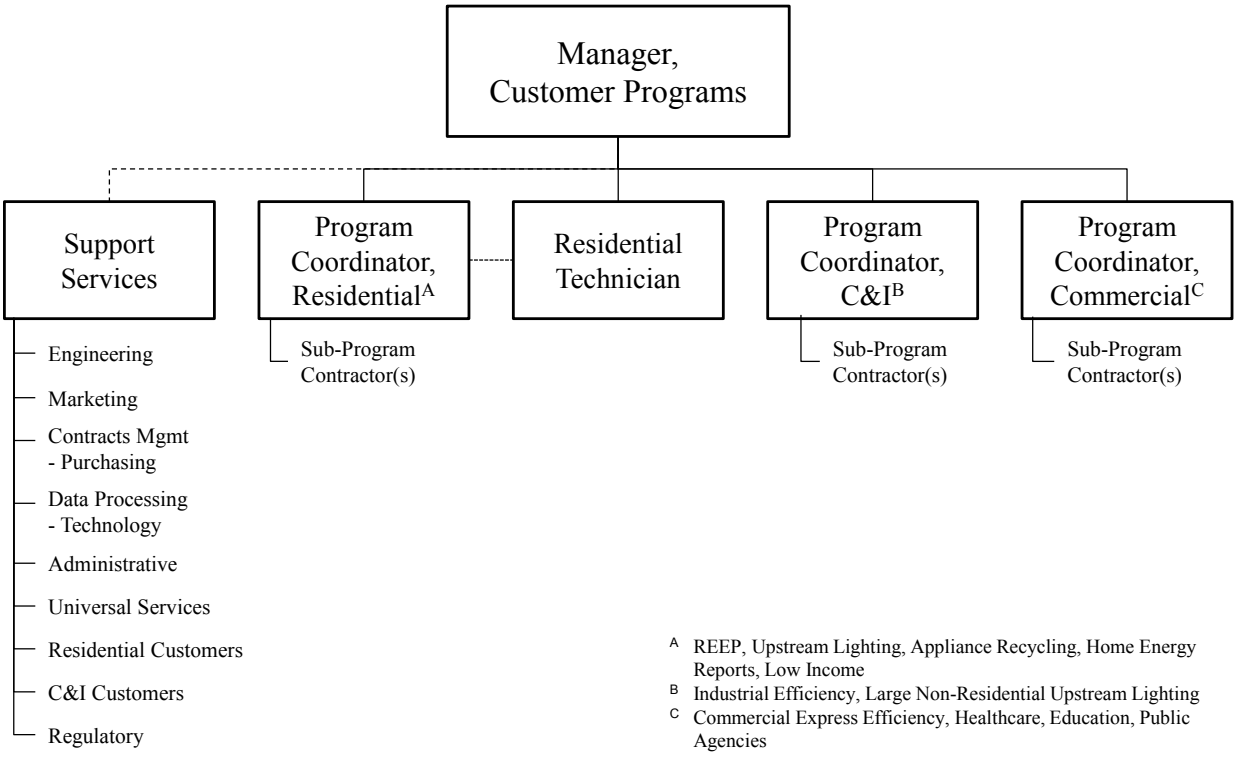
EE Sector	Program	Implementation
Residential		
	Residential Energy Efficiency Program	Core Team (or Contractor)
	REEP Whole House Audit/Retrofit	Sub-program Contractor
	Residential Appliance Recycling	Sub-program Contractor
	Residential Behavioral Savings	Sub-program Contractor
	Savings by Design (New Construction)	Core Team (or Contractor)
	Low Income Energy Efficiency	Core Team (or Contractor)
Small Commercial & Industrial Sectors		
	Express Efficiency	Core Team (or Contractor)
	Small/Medium Nonresidential Upstream Lighting	Sub-program Contractor
	Small Commercial Direct Install	Sub-program Contractor
	Multifamily Housing Retrofit	Sub-program Contractor
Large Commercial & Industrial Sectors		
	Commercial Efficiency Program	Core Team (or Contractor)
	Industrial Efficiency Program	Core Team (or Contractor)
	Large Nonresidential Upstream Lighting	Sub-program Contractor
Governmental/Nonprofit/Education Sectors		
	Public Agency Partnership Program	Core Team (or Contractor)
	Community Education	Core Team (or Contractor)

The term "Core Team" referred to in Figure 2 means the program is directly implemented by Duquesne Light staff and supported by limited services contractors or Conservation Service Providers (CSPs) at Duquesne Light's discretion. Program implementation requires significant planning and operations management functions. In addition to initiating the contracting process, each contractor is managed and integrated into an organized, cohesive operation. Program procedural guidelines are developed and followed. Documentation and electronic data structures are maintained and managed.

Customers are engaged through at least three channels. First, Duquesne Light promotes the programs to its customers, through marketing approaches such as mass media advertising, direct marketing, events, conferences, account representatives and electronic media. Second, the Duquesne Light contractors and subcontractors have similar responsibilities, with a specific focus on securing commitments for customers to participate in the programs. Third, trade allies, such as builders, architects, engineers, vendors, equipment installation contractors, retailers and others are informed of the Duquesne Light programs, with the objective of securing their willingness to participate and encourage their customers and clients to participate. Trade allies are engaged, primarily through direct marketing, events, conferences and account representatives.

The implementation organization for Duquesne Light is housed within the customer care function. The delivery organization size and function is driven by the portfolio of programs offered. The size and structure also reflects the use of contractors and subcontractors. The organization is headed by one manager, who is responsible for the energy efficiency and conservation program planning and implementation. The manager is supported by several sector or segment specific program coordinators. There also is support staff for functions to include engineering, marketing, data processing, regulatory and contract management. The organizational chart pictured below represents the structure of the organization to implement the energy efficiency and conservation plan.

Figure 3: Customer Programs Organizational Chart



1.7. Summary description of EDC's data management, quality assurance and evaluation processes; include how EE&C plan, portfolios, and programs will be updated and refined, based on evaluation results.

Data Management: All energy efficiency project activity is tracked and recorded in the Program Management and Reporting System (PMRS). When projects are established, PMRS assigns project numbers that are linked to the Duquesne Light's customer information and billing system by customer service agreement identification number. Hard and electronic copy project files are organized and filed by PMRS project number. Data elements tracked in PMRS include customer data, project and measure data; energy and demand savings; as well as financial rebate and, as applicable, Conservation Service Provider (CSP) performance payment data. Measure level data contain applicable baseline, as well as proposed and installed, measure definition to

support claimed savings for measures listed in Figures 13 and 28. PMRS data extraction supports all program reporting as well as evaluation measurement and verification sampling.

Quality Assurance: (A more detailed description of quality assurance is provided under Section 6.) All Conservation Service Providers (CSP) under contract to implement Duquesne Light energy efficiency programs are required by contract statements of work to provide a Program Management Plan ("PMP"). The PMP presents the program rationale, assumptions, approach, processes to include policies and procedures, production plan, marketing plan, performance metrics and a quality assurance plan.

Procedures are in place to ensure prospective projects receive appropriate and consistent review prior to approval and incentive payment processing. This ranges from minimal residential measure rebate application processing to extensive commercial and industrial (C&I) project development and customer incentive processing. C&I incentive processing varies significantly depending on project type and size. A project review flow chart and project file content requirements are addressed in Section 6.

Evaluation Process: Projects and measure reported savings are verified pursuant to the Duquesne Light Evaluation Measurement and Verification (EM&V) Plan. The EM&V Plan ensures customer projects are verified using a systematic process that is consistent with the Statewide Evaluator's (SWE) Audit Plan and Evaluator's Framework for Pennsylvania Act 129 Energy Efficiency and Conservations Programs (Audit Plan). The Duquesne Light EM&V Plan specifies sample plans and applicable verification rigor consistent with the Audit Plan and is vetted with and approved by the SWE.

Program Refinements: Program refinement is continuous, resulting from experience gained through program implementation and adherence to quality assurance procedures described above. Augmenting internal process improvements, programs and processes are subject to program implementation process evaluations performed by an independent EM&V contractor.

Additionally, customer and stakeholder input are solicited during regularly scheduled Act 129 EE&C Program stakeholder meetings. Any agreed-upon changes to programs will be requested through the Commission's "Minor Changes" process, if necessary. The Company will also monitor and report on all existing programs at its stakeholders' meeting.

Duquesne Light will evaluate requests for custom measure rebates on the case-by-case basis to determine cost effectiveness and energy savings potential. Measures, including combined heat and power ("CHP") projects, distributed energy resources, and micro grids may be considered and approved if found to be cost effective as indicated by the Total Resource Cost ("TRC") score above 1.0, based upon project savings calculated in accordance with the PA Technical Reference Manual ("TRM") standards and proof of positive fuel savings using the Department of Energy endorsed source fuel efficiency models.

1.8. Summary description of cost recovery mechanism.

The Act allows all EDCs to recover on a full and current basis from customers, through a reconcilable adjustment clause under 66 Pa. C.S. § 1307, all reasonable and prudent costs incurred in the provision or management of its plan. The Act also requires that each EDC's plan include a proposed cost-recovery tariff mechanism, in accordance with 66 Pa. C.S. § 1307, to fund all measures and to ensure full and current recovery of prudent and reasonable costs, including administrative costs, as approved by the Commission. To that end, Duquesne Light has designed a surcharge and reconciliation mechanism for all customer segments. The surcharge has been designed in a manner that recovers costs of the programs from the customers who have an opportunity to participate in those programs.

The Company, as successfully implemented in Phase I and Phase II, proposes to implement five surcharges for Phase III. The Residential surcharge is designed to recover costs on a cents per kilowatt-hour basis with an annual reconciliation; the charges would be included in the overall distribution kWh rate. The Small and Medium Commercial and Industrial surcharges are also designed to recover costs on a cents per kilowatt-hour basis with an annual reconciliation. The Large Commercial and Industrial surcharges are designed to recover costs through a combination of a fixed monthly surcharge and a demand-based surcharge with an annual reconciliation. All of the commercial and industrial customers will have a separate line item delineation of these charges on the bill.

2. Energy Efficiency & Conservation Portfolio/Program Summary Tables & Charts

(The objective of this section is to provide a quantitative overview of the entire plan for the five-year period. The audience will be those who want to see the "numbers", but not all the details.)

2.1. Residential, Commercial/Industrial Small, Commercial/Industrial Large and Governmental/Educational/Non-profit Portfolio Summaries (see Table 4).[7]

See Section 11 for Table 4.

2.2. Plan data: Costs, Cost-effectiveness and Savings by program, sector and portfolio (see Tables 1-4).

See Section 11 for Tables 1-4.

2.3. Budget and Parity Analysis (see Table 5).

See Section 11 for Table 5.

[7] A *project* is an activity or course of action involving one or multiple energy efficiency measures, at a single facility or site. A *program* is a group of projects, with similar characteristics and installed in similar applications. Individual programs include those that involve encouraging and/or incenting the installation of equipment or practices associated with new-construction and retrofit solar energy and energy efficiency projects. The *portfolio* consists of all the programs in the residential, commercial/industrial small, commercial/industrial large or governmental/educational/non-profit sectors. Residential sector programs include low-income, single-family and multi-family housing projects. Commercial/Industrial Small sector programs include small commercial, industrial, agricultural, and public sector facility projects. Commercial/Industrial Large sector programs include large commercial, industrial, agricultural, and public sector facility projects. Governmental/Educational/Non-Profit includes Federal, State, Municipal, and Local Governments; as well as school districts, institutions of higher learning, and non-profit entities. The applicable EE&C sector designation is based on a customer's rate schedule not the size of the energy efficiency project or type of building.

3. Program Descriptions

(The objective of this section is to provide detailed descriptions of each proposed program and the background on why particular programs were selected and how they form balanced/integrated portfolios.)

3.1. Discussion of criteria and process used for selection of programs:

The Phase III EE&C Plan was based on detailed information about utility customer populations, building stock and regional energy use contained in Duquesne Light's filed energy efficiency potential forecast.[8] Duquesne Light's Phase III EE&C Plan incorporated needed updates that were provided through the use and application of information contained in the Pennsylvania Public Utility Commission adopted statewide energy efficiency potential study[9] as well as end-use saturation studies for residential, commercial and industrial sectors.[10,11]

The Phase III EE&C Plan projected measure content and savings (measure mix) reflect measure activity documented during the 2013 and 2014 program years with updated deemed savings taken from the 2016 PA Technical Reference Manual.

Given the aforementioned information and an understanding about specific building stock technology applications capable of rendering the targeted reductions, the project team identified optimal delivery mechanisms. Energy efficiency delivery mechanisms ("programs") described in this Plan were adopted from benchmarking[12] and assessment of past program performance.

3.1.1. Describe portfolio objectives and metrics that define program success (e.g., energy savings, customers served, number of units installed).

As described above, the project team identified key target markets for efficiency gain potential and proven approaches to program delivery. Given this foundation, the planning process imposed program budget limits consistent with the Act and the Commission's Implementation Order of June 11, 2015. Available funding was first allocated to each major rate class in proportions approximating annual energy consumption, then adjusted based on requirements to achieve the Commission's required reductions in low income and governmental/educational/non-profit segments, as well as certain comprehensive program requirements of the Commission's Implementation Order. Program goal allocations also incorporated demonstrated delivery channel strengths and weaknesses from Phase I and II in a balance to achieve reduction mandates given the Commission's funding authorization.

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[8] Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation and Demand Response Plan Docket No. M-2009-2093217, June 30, 2009; Part (3) Energy Efficiency and Demand Side Response Study, MCR Performance Solutions, LLC, June 26, 2009.

[9] Ibid, footnote 2

[10] Ibid, footnote 2

[11] Ibid, footnote 2

[12] Ibid, footnote 8

Figure 4: Budget

Sector	Energy Use	5-Year Projected Expenditures	Percent Total
Residential	30.6%	$26,587,748	30.2%
Commercial	47.4%	$46,070,976	52.4%
Industrial	22.0%	$15,254,418	17.4%
Subtotal EE		$87,913,143	
DR Programs		$9,739,719	
Total		$97,652,861	

The Act requires certain amounts of the mandated reductions be achieved through programs serving low income customers. Working with the governmental/educational/non-profit sector, programs were designed and funded to meet these requirements. In addition to mandated programs, a portfolio of programs was assembled to penetrate key markets. Figure 5 shows the structure of the portfolio to meet these objectives.

Figure 5: Projected Portfolio Savings

Energy and Demand Savings—May 31, 2021

Sector	Program Name	Energy Savings (kWh)	Demand Savings (kW)
Residential			
	Residential Energy Efficiency Program	85,894,931	9,267
	REEP Whole House Audit/Retrofit	1,750,916	950
	Residential Appliance Recycling	8,815,961	987
	Residential Behavioral Savings	24,146,105	0
	Savings by Design (New Construction)	409,000	59
	Low Income Energy Efficiency	16,550,885	353
	Subtotal	137,567,798	11,616
Small Commercial & Industrial Sectors			
	Express Efficiency	35,147,555	6,566
	Small/Medium Nonresidential Upstream Lighting	19,464,329	5,850
	Small Commercial Direct Install	10,934,231	1,282
	Multifamily Housing Retrofit	8,912,014	551
	Subtotal	74,458,130	14,250
Large Commercial & Industrial Sectors			
	Commercial Efficiency Program	50,575,285	5,660
	Industrial Efficiency Program	46,966,828	14,115
	Large Nonresidential Upstream Lighting	84,021,466	9,403
	Subtotal	181,563,579	29,178
Governmental/Nonprofit/Education Sectors			
	Public Agency Partnership Program	46,772,369	5,234
	Community Education	9,372,444	162
	Subtotal	56,144,813	5,396
Total EE&C Plan Savings		449,734,320	60,439
Mandated Energy Savings		440,916,000	N/A
Demand Response Programs			
	Direct Load Control Program	N/A	2,205
	Large Curtailable Load Program	N/A	41,895
	Total DR Impacts	N/A	44,100
Mandated Demand Response Program Demand Reduction			42,000

3.1.2. Describe how programs were constructed for each portfolio to provide market coverage sufficient to reach overall energy and demand savings goals. Describe analyses and/or research that were performed (e.g., market, best-practices, market modeling).

Program Portfolio Structures:
As described under Section 3.1 and 3.1.1, energy efficiency potential is forecast based on customer building stock and technology applications within that building stock. This approach is functional and consistent with industry standard practices. Programs described herein are planned according to a customer market segmentation approach. Programs are designed to (1) target identified efficiency gain potential (energy and demand), and (2) address market segment specific needs and barriers. The following chart shows customer sector building stock categories observed in the development of the energy efficiency programs described herein:

Figure 6: Customer Sector Building Stock Categories[13]

Residential Building Stock	Commercial Building Stock	Industrial Building Stock
Single Family	Colleges	Food Processing
Multifamily	Food Stores	Textiles / Apparel
Manufactured Housing (mobile homes)	Healthcare	Lumber / Furniture
	Lodging	Paper & Allied Products
	Offices—Large	Printing
	Offices—Small	Chemical Products
	Refrigerated Warehouses	Petroleum / Coal
	Retail Stores	Rubber / Plastics
	Restaurants	Stone / Clay / Glass
	Schools	Primary Metals
	Warehouses	Fabricated Metals
		Industrial Machinery
		Electronics
		Transportation Equipment
		Instruments

The programs described in the following sections are developed to address specific market segments or delivery channels.

Residential Revenue Class
Duquesne Light's project team analyzed residential sector summary actual data for 2007–2008 and 2009-2013 as well as 2015-2025 forecast data for customer count, energy and demand statistics. Dwelling type and vintage definition was developed by analyzing American Community Survey data for Allegheny and Beaver counties,

[13] Ibid, footnote 6

representative of housing characteristics in Duquesne Light's service area.[14] The analysis supported a proportional allocation of percentages of regional housing stock into single-family, multi-family and mobile home dwelling types. Housing stock was further disaggregated into vintage groups built 37 years ago or newer and more than 37 years ago. This period marked the onset of significant changes to Pennsylvania's building codes and serves as an indicator of associated efficiency gain potential. For the purposes of establishing prototypical housing stock characteristics, the team evaluated available saturation studies, analyzed Pennsylvania building construction codes and standards, interviewed weatherization contractors who are active in the area and performed secondary research. The following table provides Duquesne Light housing stock projections:

Figure 7: Duquesne Light Housing Stock Projections

Residential Housing Stock	Dwellings	Percent
Single Family Post-1978	57,753	10.9%
Single Family Pre-1978	325,848	61.7%
Multifamily Post-1978	20,747	3.9%
Multifamily Pre-1978	117,059	22.2%
Mobile Homes Post-1978	985	0.2%
Mobile Homes Pre-1978	5,559	1.1%
	527,951	100.0%
Total Post-1978	79,485	15.1%
Total Pre-1978	448,466	84.9%
	527,951	100.0%

Residential EE&C program planning incorporates energy and demand savings associated with implementing lighting, appliance, heating ventilation and air conditioning, building shell, water heating and other energy efficiency measures shown in Figure 13. Residential sector measures and their energy and demand savings estimates are consistent with the Pennsylvania 2016 Technical Reference Manual (TRM).

Where appropriate, especially for weather sensitive measures, measure savings impacts were modeled by applying prototypical housing stock definitions and using building performance modeling software with weather inputs that are appropriate for the Pittsburgh area. Prototypical housing stock type and size definitions for single-family, multi-family and mobile homes are summarized below:

[14] Ibid, footnote 6

Figure 8: Prototypical Housing Stock Type and Size

Modeled Housing Stock Sizes	Ft^2
Single Family Post-1978	1,643
Single Family Pre-1978	2,123
Multifamily Post-1978	724
Multifamily Pre-1978	936
Mobile Homes Post-1978	855
Mobile Homes Pre-1978	1,105

Heating ventilation and air conditioning (HVAC) measure efficiencies were adjusted to align with new federal efficiency standards.

Commercial Revenue Class

Duquesne Light's project team analyzed commercial sector summary actual data for 2007–2008 and 2009-2013 as well as forecast 2015-2025 customer counts, energy and demand statistics. The project team utilized Phase I and Phase II research containing North American Industry Classification System (NAICS) codes for Duquesne Light's larger commercial customers, to identify market segments to assist in directing its marketing efforts within the broader commercial customer sector.

County Business Pattern data (business establishments with paid employees) were applied to annual energy consumption by building type and energy consumption percentages by building type were calculated. Proportional energy consumption for building types was compared with NAICS coded Duquesne Light commercial customer data. Any significant variation was noted. Sector consumption for retail stores and restaurants was adjusted upward as a result of this analysis. This treatment is justified due to the age of available segment data and high "churn" rates for these customer segments. Overall, the customer data was corroborated by the exercise and found to present a reasonable and stable basis for energy efficiency program planning.

Energy intensity (kWh per ft^2) by building type was established using U.S. DOE EIA Commercial Building Energy Consumption Survey information and by using the U.S. DOE Building Energy Simulation Modeling Program DOE-2.1.E (DOE-2) for building type performance modeling. Energy intensities were applied to building type annual consumption data to calculate building stock ft^2 as shown in the table below:

Figure 9: Building Stock Square Feet[15]

Building Types	Ft^2
Colleges	7.0%
Food Stores	3.0%
Health Care	17.0%
Lodging	1.0%
Large Offices	30.0%
Misc	5.0%
Refrigerated Warehouses	0.1%
Retail Stores	10.5%
Restaurants	5.0%
Schools	3.5%
Small Offices	16.0%
Warehouses	1.9%
	100.0%

Small commercial customers can receive EE&C incentives under the Express Efficiency Program. They can also receive the direct-installation of energy efficiency measures by specialized contractors through the Small Commercial Direct-Install program and Multifamily Housing Retrofit Program. Additionally, small commercial customers can receive lighting equipment distributor instant rebates provided under the Small Non-Residential Upstream Lighting Program.

All large commercial customers are served under the Commercial Efficiency Program. The program employs specialized contractors for the office building and retail[16] market engagement channels. Additionally, large commercial customers can receive lighting equipment distributor instant rebates provided under the Large Non-Residential Upstream Lighting Program.

The colleges, schools and healthcare segments are served under the Governmental/ Educational/Non-profit and Institutional programs (described below).

Industrial Revenue Class

Duquesne Light's project team analyzed industrial sector summary actual data for 2007–2008 and 2009-2013 as well as 2015-2025 forecast data for customer count, energy and demand statistics. The project team utilized Phase I and Phase II research containing North American Industry Classification System (NAICS) codes for Duquesne Light's larger industrial customers, to identify market segments to assist in directing its marketing efforts within the broader industrial customer sector. This available information was considered the optimal level given the unique characteristics of Duquesne Light's industrial customer base. The following table shows industrial market segment energy consumption:

[15] Ibid, footnote 6

[16] The retail segment engagement channel includes the food stores, lodging, retail stores and restaurant market segments.

Figure 10: Industrial Market Segment Energy Consumption[17]

Market Segment	Segment Energy Use %
Food Processing	2.8%
Textiles / Apparel	0.0%
Lumber / Furniture	0.2%
Paper	0.0%
Printing	1.3%
Chemicals	19.8%
Petroleum / Coal	0.2%
Rubber / Plastics	1.6%
Stone / Clay / Glass	7.3%
Primary Metals	54.5%
Fabricated Metals	3.9%
Industrial Machinery	2.7%
Electronics	3.9%
Transportation Equipment	0.8%
Instruments	0.2%
Miscellaneous Mfg	0.8%
	100.0%

The Industrial Efficiency Program will employ specialized engagement channel CSPs to perform detailed energy audits, prepare feasibility studies and make energy efficiency recommendations to the primary metals and chemical products industrial segments. All industrial sector customers can receive EE&C incentives under the Industrial Efficiency Program.

3.1.3. Describe how energy efficiency, conservation, solar, solar photovoltaic systems, geothermal heating, and other measures are included in the portfolio of programs as applicable.

The project team performed extensive research described above to document the cost and impacts of EE&C Plan measures. Duquesne Light's Solar Photovoltaic Incentives Program was submitted in Phase I, but was removed per the Opinion and Order entered October 27, 2009 in Docket No. M-2009-2093217 and was not be offered in Phase II. Duquesne Light reviews, on an on-going basis, the potential to provide cost-effective solar photovoltaic technology programs. Unfortunately the programs continue to fail the required cost-effectiveness review. Through the proposed programs, Duquesne Light can promote all cost-effective technologies under its nonresidential custom rebate offerings. Residential rebates currently include passive solar water heating (see Figure 13).

[17] Ibid, footnote 6

3.1.4. Describe the comprehensive measures to be offered to the residential and non-residential rate classes.

Refer to the Whole House Retrofit Program described in Section 3.6.4, Small Commercial Direct Install Program in Section 3.7.3 and Multifamily Housing Retrofit Program in Section 3.8 for the comprehensive measures to be offered.

3.2. Residential Sector (as defined by EDC Tariff) Programs – include formatted descriptions of each program organized under the following headings:

- Program title and program years during which program will be implemented[18]
- Objective(s)
- Target market
- Program description
- Implementation strategy (including expected changes that may occur in different program years)
- Program issues and risks and risk management strategy
- Anticipated costs to participating customers
- Ramp up strategy
- Marketing strategy
- Eligible measures and incentive strategy, include tables for each year of program, as appropriate, showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)
- Maximum deadlines for rebates
- Program start date with key schedule milestones
- Assumed Evaluation, Measurement and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator
- Administrative requirements – include internal and external staffing levels
- Estimated participation – includes tables indicating metric(s) with target value(s) or target ranges per year
- Estimated program budget (total) by year – include table with budget per year
- Estimated percentage of sector budget attributed to program

[18] It is assumed that there are five program years, each starting June 1 and ending May 31st. The first program year (PY) is Program Year 2016 and the last is Program Year 2020.

- For demand response programs, costs to acquire MWs from customers who participate in PJM's Emergency Load Response Program (ELRP) and those that do not participate in PJM's ELRP.[19]
- Savings targets – include tables with estimated total MWh/yr and MW goals per year and/or ranges per year and cumulative tables that document key assumptions of estimated savings ranges per measure or project
- Cost-effectiveness – include TRC and net-to-gross (NTG) ratio[20] for each program
- Other information deemed appropriate

3.2.1. Residential Energy Efficiency Rebate Program

Title: The Residential Energy Efficiency Rebate Program ("REEP") will be implemented during program years 2016 through 2020.

Objectives: The REEP program is designed to mitigate primary cost and awareness barriers to residential customer adoption of energy efficiency measures and practices. To affect this outcome, REEP provides access to both printed and internet based educational materials, as well as financial incentives in the form of energy efficient product rebates.

Target Market: This program is made available to Duquesne Light residential customers.

Program Description: The REEP encourages customers to make an energy efficient choice when purchasing and installing household appliances and equipment measures by offering educational materials on energy efficiency options and energy efficiency rebates to offset the higher cost of energy efficient equipment. Program educational materials and rebates are provided in conjunction with the Duquesne Light online home energy audit. The online home energy audit will allow customers to obtain instant results by answering questions regarding their home energy use. A menu of approved measures and rebate amounts simplifies the audit process for the customer and provides a "per-widget" rebate to reduce the cost of replacing outdated and inefficient equipment. A more comprehensive home energy audit will be available for customers (see Whole House Retrofit Program in Section 3.6.4). This more comprehensive audit features an onsite assessment of home energy use conducted by residential program technicians.

Implementation Strategy: The REEP is implemented with assistance by a qualified CSP. Members of Duquesne Light's core team will support ongoing planning activities, contract management and assist with program outreach and marketing, as well as internal tracking and reporting. The CSP program coordinator may perform marketing,

[19] Per the June 11, 2015 Implementation Order, the EDCs must demonstrated in their EE&C Plans that the cost to acquire MWs from customers who participate in PJM's ELRP is no more than half the cost to acquire MWs from customers in the same rate class that are not participating in PJM's ELRP.

[20] Per the June 11, 2015 Implementation Order, EDCs are required to provide NTG ratios in addition to standard TRC ratios, with language reiterating the speculative nature of NTG ratios. *See June 11, 2015 Implementation Order at 107.*

rebate processing, verification and calculation of overall savings. Customers submit rebate applications online, by mail or fax.

Duquesne Light worked with regional stakeholders to incorporate within REEP, upstream and mid-stream incentives (incentives provided manufacturers and retail distributors) to support point-of-purchase instant rebates. A web-based home energy efficiency survey application is provided via linkage to Duquesne Light's website.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. The program has been operating for six years. Implementation CSP contract statements of work are performance-based, include production schedules; performance payments are tied to independent measurement. Provisions in CSP contract language provides for the shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: The REEP program is designed to offset approximately one-third of energy efficiency measure incremental cost. The cost to the participant is approximately two-thirds the incremental cost for choosing to purchase identified energy efficiency equipment.

Ramp-up Strategy: This program was launched on December 1, 2009, no ramp-up is indicated. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Duquesne Light will continue to assist the CSP to coordinate marketing activities with local entities and outreach channels (e.g., local governments, community, faith-based and ethnic-based organizations, business associations, chambers of commerce, customer trade associations, etc). Duquesne Light will also support the program by marketing program services to its customers and through existing channel partners, such as large commercial, institutional and local government customers. Duquesne Light will work with its CSP contractor to develop a marketing plan that may incorporate direct mail, web-based, circulated print media, as well as radio and television advertising options.

Eligible Measures and Incentives: REEP program incentives are designed to offset a portion of measure incremental costs. Incentives offered under this program are provided in Figure 13: Residential Energy Efficiency Program Eligible Measures (below).

Maximum Rebate Deadlines: The maximum deadline for rebates paid by the REEP is 180 days from date of purchase or installation of the energy efficiency measure.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is

employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: In addition to overarching portfolio management, organizational planning includes provision for two dedicated full-time employees to perform management and coordination of all residential programs (see Figure 3 or 49). Accordingly, this program is to be administrated by the two Duquesne Light employees on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are processing incentive payments for the purchase and installation of energy efficiency equipment rendering deemed savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 11: Residential Energy Efficiency Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$1,496,667	$1,496,667	$1,496,667	$1,496,667	$1,496,667	$7,483,335
Admin	$1,637,854	$1,637,854	$1,637,854	$1,637,854	$1,637,854	$8,189,272

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 12: Residential Energy Efficiency Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	1,853	1,853	1,853	1,853	1,853	9,267
Energy Savings (kWh)	17,178,986	17,178,986	17,178,986	17,178,986	17,178,986	85,894,931

Cost-Effectiveness:

- TRC - 1.6

- NTG[21] – 69.3%
- Net TRC – 1.5

[21] Note: Net-to-gross ratios (NTG) are not applied to TRC cost test ratios to render net TRC cost test ratios. NTG refers to the program participant free-ridership and spillover effects and attempts to establish program attribution to a customer's decision to implement a given measures. NTG ratios are applied to lifecycle benefits, reported savings impacts and measure incremental costs. One hundred percent of program administration costs are included in the determination of Net TRC cost test ratio (Net TRC). See Tables 8A-E for details on Net TRC derivation. NTG ratios used in Table 8A-E and Net TRC determination are taken from PY6 NTG studies of similar programs.

Figure 13: Residential Energy Efficiency Program Eligible Measures

Residential Measure	Unit	Rebate Amount Up to $/Unit
Dehumidifier 1-25 pints/day	Dehumidifier	$20.00
Dehumidifier 25-35 pints/day	Dehumidifier	$20.00
Dehumidifier 35-45 pints/day	Dehumidifier	$20.00
Dehumidifier 45-54 pints/day	Dehumidifier	$20.00
Dehumidifier 54-75 pints/day	Dehumidifier	$20.00
Dehumidifier 75-185 pints/day	Dehumidifier	$20.00
Heat Pump Water Heater	Water Heater	$350.00
Freezer Upright w/automatic defrost	Freezer	$10.00
Freezer - Chest Freezer	Freezer	$10.00
Freezer Compact Upright w/manual defrost	Freezer	$10.00
Freezer Compact Upright w/automatic defrost	Freezer	$10.00
Freezer - Compact Chest Freezer	Freezer	$10.00
Refrigerator Manual Defrost	Refrigerator	$25.00
Refrigerator Partial Automatic Defrost	Refrigerator	$25.00
Refrigerator Top mount freezer without door ice	Refrigerator	$25.00
Side mount freezer without door ice	Refrigerator	$25.00
Refrigerator bottom mount freezer without door ice	Refrigerator	$25.00
Refrigerator Bottom mount freezer with door ice	Refrigerator	$25.00
Refrigerator Side mount freezer with door ice	Refrigerator	$25.00
Energy Star Room Air Conditioner	Air Conditioner	$25.00
Refrigerator Recycling	Refrigerator	$35.00
Freezer Recycling	Freezer	$35.00
Solar Water Heat	System	$300.00
Insulation - Ceiling & Wall Insulation	Square Feet	$0.23
Occupancy sensor based control	Sensor	$10.00
Swimming Pool Pump, Variable Speed	Pool Pump	$200.00
Central Air Conditioner SEER 15	Ton	$100.00
Central Air Conditioner SEER 16	Ton	$100.00
Central Air Conditioner SEER 17	Ton	$100.00
Central Air Conditioner SEER 18	Ton	$100.00
Central Air Conditioner SEER 19	Ton	$100.00
Central Air Conditioner SEER 20	Ton	$100.00
Central Air Conditioner SEER 21	Ton	$100.00
Air Source Heat Pump - 15 SEER / 8.8 HSPF A/C Heat Pump	Ton	$100.00
Air Source Heat Pump - 16 SEER / 8.4 HSPF A/C Heat Pump	Ton	$100.00
Air Source Heat Pump - 17 SEER / 8.6 HSPF A/C Heat Pump	Ton	$100.00
Air Source Heat Pump - 18 SEER / 9.2 HSPF A/C Heat Pump	Ton	$100.00
Directed - Heat Pump Program	Unit	$400.00
High Efficiency Fan Heating RS4	Fan	$100.00
Programmable Thermostat RS5	Thermostat	$25.00
Ductless Mini-Split Heat Pumps	Heat Pump	$100.00

3.2.2. Residential Appliance Recycling Program

Title: The Residential Appliance Recycling Program ("RARP") will be implemented during program years 2016 through 2020.

Objectives: Assist customers to become more energy efficient by educating them about the amount of energy consumed and the costs associated with operating inefficient refrigerators and freezers. Provide access to an easy-to-use service to remove and recycle the operational inefficient refrigerators and freezers. Customer motivation is increased by providing a cash incentive for program participation.

Target Market: Duquesne Light's energy efficiency potential forecast estimates that of the 528,000 households served, approximately 42,000 households operate more than one refrigerator or freezer. A large and as yet untapped population of inefficient refrigerators and freezers remain to be removed and safely recycled.

Program Description: The Residential Appliance Recycling Program encourages residential customers in Duquesne Light's service territory to turn in their older operating refrigerators and freezers to be recycled. Projected energy savings and peak demand reductions for removing an older, operating refrigerator or freezer are tied to unit energy savings specified in the 2016 TRM. To encourage participation in this program, this program provides a check up to $50 for the removal of an old refrigerator or freezer. The program will consist of Duquesne Light hiring a contractor to administer the program that would consist of the following services:

- Vendor to handle questions and to set up recycling appointments
- Website (program details, reservation requests)
- Onsite verification of unit that is in working condition
- Unit collection/transportation
- Recycling processing (including CFC-11 (foam) incineration or recycling)
- Rebate check & rebate processing
- Reporting

Implementation Strategy: Contractor proposals are evaluated based upon inclusion of a proposed marketing and outreach plan, to include the following elements:

- Customer marketing
- Bill insert and direct mail document development
- Radio and television advertisement development
- Trade show and store display development
- Rebate processing and verification
- Customer enrollment: Customer contacts vendor call center to schedule to have their older, functioning refrigerator or freezer removed. Once the refrigerator or freezer has been determined to be functional, it is removed without any cost to the customer.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts, and provides early warning regarding program under- or over-subscription. Provisions in CSP contract language provide for shifting funds from under-performing programs. Should unforeseen market changes affect customer, service provider and program economics so as to render the program non cost-effective. Duquesne Light will petition the Commission to make changes to the program or discontinue it and move associated funding to viable cost-effective programs.

Anticipated Cost to Participating Customers: There is no cost to participating customers.

Ramp-up Strategy: This program is the continuation of a successful Phase I and Phase II program; however, there are still large populations of refrigerators and freezers to be "harvested." No ramp-up strategy is indicated for this program. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Duquesne Light works with a selected CSP to develop a marketing plan that incorporates direct mail, web-based, circulated print media as well as radio and television advertising options. The vendor CSP will handle questions, set up recycling appointments and provide website-based systems to provide program details and make reservation requests.

Eligible Measures and Incentives: Based on the experience of other utilities attempting to operate appliance recycling programs that include room air conditioners, Duquesne Light has limited the program scope to refrigerators and freezers. A check up to $50 is given to the customer once the following conditions have been met:

- Customers are required to have the functioning refrigerator or freezer at their billing address at the time of the removal.
- The refrigerator or freezer must be a consumer model between 10-30 cubic feet.

Maximum Deadline for Rebates: Rebate deadlines do not apply to appliance recycling programs.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: In addition to overarching portfolio management, organizational planning includes provision for two dedicated full-time employees to perform management and coordination of all residential programs (see Figure 3 or 49).

Accordingly, this program is to be administrated by the two Duquesne Light employees on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: Duquesne projects an annual capture rate reflected in the following table:

Figure 14: Estimated Participation

Program Year	Participating Customers
2016	1,720
2017	1,720
2018	1,720
2019	1,720
2020	1,720
Total	**8,600**

Estimated Program Budget:

Figure 15: Residential Appliance Recycling Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$60,232	$60,232	$60,232	$60,232	$60,232	$301,158
Admin	$199,641	$199,641	$199,641	$199,641	$199,641	$998,203

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 16: Residential Appliance Recycling Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	197	197	197	197	197	987
Energy Savings (kWh)	1,763,192	1,763,192	1,763,192	1,763,192	1,763,192	8,815,961

Cost Effectiveness:

- TRC - 2.5
- NTG[22] – 64.7%
- Net TRC – 1.9

3.2.3. Residential Home Energy Reporting Program

Title: The Residential Home Energy Reporting Program will be implemented during program years 2016 through 2020.

Objectives: The objectives of the program are (1) to educate residential participants on electricity consumption using graphic information tools; (2) to change household behavior leading to less electricity usage; and (3) to deliver energy savings of more than 1% of average participant's electric usage.

Target Market: Over the five-year Phase III performance period the program targets more than 34,000 high-use residential customers.

Program Description: The program sends via direct mail home energy use reports (HER) that compare recipient customer's energy use to 100 of their peers (i.e., customers with similar home type and size). HER provides for comparison of the last two months of energy consumption by 1) the most efficient, top 20% of the peer group, 2) the HER recipient, and 3) the entire peer group. The reports generate verifiable savings between 1.5%-3.5% of total home energy use.

Implementation strategy: HERs are provided targeted customer group in each year of Phase III 2016-2020.

Program Issues, Risks and Risk Management Strategy: There is an attendant risk the program implementer cannot deliver the contracted HERs and that consumers will not respond to the HERs by changing energy use behavior. Duquesne Light will mitigate this risk by selecting an implementation contractor who has a proven track record. The selected CSP will have previously deployed HERs on a national scale for leading energy efficiency programs. Energy savings results will be quantified using a PA PUC approved scientific measurement and verification approach previously used by most PA EDCs. Public Utility Commissions in California, Minnesota, Massachusetts and New York have adopted similar protocols to count energy savings from behavior-based energy efficiency programs.

Anticipated Costs to Participating Customers: There is no cost to participating customers.

Ramp-up Strategy: This program is a continuation of Phase I and Phase II programmatic offerings; no program ramp-up action is indicated. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

[22] Ibid footnote 21

Marketing Strategy: Large-scale, individualized direct-mail campaign and provision of a customer service web portal are used. High-use customers are selected on an opt-out basis for enrollment in the multi-year pilot.

Eligible Measures and Incentives: The HER described above is the only program measure; there are no customer incentives. Estimated per customer savings are approximately 300-600 kWh. Additionally, HERs will also be utilized to promote other residential program offerings as a means to help customers reduce consumption.

Maximum Deadline for Rebates: The program does not provide rebates and no rebate deadline is applicable.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Evaluation, Measurement, and Verification (EM&V): Duquesne Light will rely on the same measurement and verification approach already provided to more than 65 utilities across the country, including utilities in Pennsylvania. The protocol includes clearly defined test and control groups and ex-post measurement of savings.

Administrative Requirements: In addition to overarching portfolio management, organizational planning includes provision for two dedicated full-time employees to perform management and coordination of all residential programs (see Figure 3 or 49). Accordingly, this program is to be administrated by the two Duquesne Light employees on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: Over the five-year Phase III performance period the program targets more than 34,000 high-use residential customers rendering deemed savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 17: Residential Home Energy Reporting Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$0	$0	$0	$0	$0	$0
Admin	$544,318	$544,318	$544,318	$544,318	$544,318	$2,721,589

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 18: Residential Home Energy Reporting Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	0	0	0	0	0	0
Energy Savings (kWh)	4,829,221	4,829,221	4,829,221	4,829,221	4,829,221	24,146,105

Cost Effectiveness:

- TRC -1.4
- NTG[23] – 100.0%
- Net TRC – 1.4

  There is no NTG research available or applicable to programs newly added to the portfolio in Phase III, these programs have a NTG of 100% applied herein.

3.2.4. Whole House Retrofit Program

Title: The Residential Whole House Retrofit Program ("WHRP") will be implemented during program years 2016 through 2020.

Objectives: The WHRP program is designed to simultaneously educate customers about the efficiency of their home as a system and to stimulate more comprehensive retrofit activity than typical equipment rebates. To affect this outcome, WHRP provides access to comprehensive home energy audits, direct install measures, education and information about available retrofit resources, including applicable measure rebates.

Target Market: The program provides tailored services to non-income qualifying Duquesne Light residential customers whom are not residents of high-rise (more than four story) buildings.

Program Description: The WHRP provides resources to residential customers to encourage a comprehensive residential home energy audit, installation of conservation measures and rebates for a range of eligible measures (Figure 13 above). The program provides up to a $250 home energy credit for the installation of audit recommended measures. Direct installation measures are provided at no cost. The program also provides home energy use education, as well as information about available rebates and other program options.

Implementation Strategy: The comprehensive audit services will be implemented with assistance by a qualified CSP(s). Members of Duquesne Light's core team will support

[23] Ibid foot note 21

ongoing planning activities; contract management; and assist with program outreach and marketing, as well as internal tracking and reporting. Selected CSP(s) and the Duquesne Light program coordinator will perform eligibility verification, schedule energy audits, provide for tracking, reporting and data management, quality control and fulfillment of customer incentive payments.

Duquesne Light will conduct outreach and marketing activities alone and/or with a selected CSP. Additionally, it will, provide coordination with other programs, such as gas company efficiency programs and Keystone HELP.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts, and provides early warning regarding program under- or over-subscription. The WHRP will employ audit tools most applicable to programmatic needs and opportunities, and also capable of migrating data to PMRS. This functionality has proven problematic in Phase II operations and is an area for improvement in Phase III. Such data management and ramp-up delay risks will be mitigated through the process of selecting the CSP(s) with existing systems, processes and demonstrated capabilities to implement cost-effective residential audit programs.

Anticipated Cost to Participating Customers: The program provides up to a $250 home energy credit for installation of audit recommended measures. Direct installation measures are provided at no cost. Additional energy efficient product incentive payments are available from Duquesne Light (see Figure 13) that can offset a portion of the incrementally greater cost of high-efficiency equipment. Participating customers pay the remaining amounts.

Ramp-up Strategy: Implementation services RFPs will be issued, responses will be reviewed and contract statements of work will be executed according to the implementations schedules provided in Section 12. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Residential customers will enter the program via the existing Duquesne Light Energy Insights online audit. Upon completion of the online audit, participants will be given an opportunity to pursue a comprehensive audit and follow links to the Whole House Audit/Retrofit Program enrollment web-page.

Duquesne Light will lead marketing activities with support from the CSP and Home Performance contractors. Duquesne Light will explore development of a full marketing plan that may incorporate direct mail and web-based, circulated print media, as well as radio and television advertising options; these channels will be utilized through cooperative marketing funding of Home Performance contractors whose businesses stand to benefit from the program.

Eligible Measures and Incentives:

- Up to $250 home energy credit for installation of audit recommended measures
- Installation of residential home audit conservation measures

- Information about available rebates (Figure 13 above) and other program options

Maximum Deadline for Rebates: Energy efficiency measure rebates, identified at Figure 13, are subject to an application deadline of 180 days from date of purchase or installation.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs (see Figure 3 or 49). The Residential Program Coordinator and Residential Technician will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are the number of home audits performed, home energy credits issued, measures installed, incentives processed for the purchase and installation of recommended energy efficiency equipment. The program is projected to render energy savings and peak demand reductions reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 19: Whole House Retrofit Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$125,000	$125,000	$125,000	$125,000	$125,000	$625,000
Admin	$119,710	$119,710	$119,710	$119,710	$119,710	$598,549

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 20: Whole House Retrofit Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	32	32	32	32	32	162
Energy Savings (kWh)	350,183	350,183	350,183	350,183	350,183	1,750,916

Cost Effectiveness:

- TRC - 1.4
- NTG[24] – 84.1%
- Net TRC – 1.2

3.2.5. Savings by Design Residential New Construction Program

Title: The Savings by Design Program ("SBD") will be implemented during program years 2016 through 2020.

Objectives: The purpose of the Duquesne Light Savings by Design residential new construction program is to improve efficiency of newly constructed homes in Duquesne Light's service territory. The program objectives are to contribute toward achievement Duquesne light's energy savings goals and influence residential new construction practices in Duquesne Light's service territory. The program seeks to help advance improved building science and energy efficiency design/build practices in the region.

Target Market: The target market for participation in the program is residential architects, builders, and contractors. All newly constructed individually metered single-family electrically heated homes in Duquesne Light's service territory using ENERGY STAR air source or ground source heat pumps as their primary source of heat are eligible to participate.

Program Description: The Savings by Design Program is intended to accelerate the adoption of energy efficiency in the design, construction and operation of new single-family homes by leveraging the EPA's ENERGY STAR Home certification. The eligibility criteria will be based on new homes being at least 15% above the 2009 IECC code and meeting all ENERGY STAR version 3.0 requirements, and/or whatever future minimum threshold is established by the EPA. The program will provide education and rebates to inform and encourage architects, builders, and home buyers on the benefits of ENRGY STAR Homes as well as requirements of gaining certification.

[24] Ibid footnote 21

Implementation Strategy: Duquesne Light will administer the Savings by Design program through a CSP. The selected CSP will implement the program on Duquesne Light's behalf by designing and delivering marketing materials; recruiting and providing education to various stakeholders; providing rebate fulfillment services; and tracking and reporting program activities and achievements toward goals.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. Implementation CSP contract statements of work are performance-based, include production schedules; performance payments are tied to independent measurement. CSP contract language will provide for program termination and the shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: The SBD program is designed to offset approximately one-third of energy efficiency measure incremental cost. The cost to the participant is approximately two-thirds the incremental cost for choosing to purchase identified energy efficiency equipment.

Ramp-up Strategy: Prior to launch, considerable effort needs to go into preparing the ground for success of the program, including:

- Recruit participating builders and develop relationships with the design/build community
- Recruit a network of Home Energy Raters to verify that homes meet ENERGY STAR Guidelines
- Conform with ENERGY STAR program requirements
- Develop streamlined process for reviewing, approving project applications and distributing incentive payments
- Develop or arrange for education of builder realtors in promotion and sales of energy efficient new homes

See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Duquesne Light will select a CSP with experience in promotion through trade allies and design firms. The implementation CSP will utilize established trade ally channels for education to create stakeholder awareness of the benefits of building ENERGY STAR Homes. Marketing strategies will utilize brochures, websites and direct marketing to building companies though face-to-face meetings, presentations at trade-shows and other events plus educational offers.

Eligible Measures and Incentives: The program is centered on promoting the implementation of the ENERGY STAR 3.0 Electric Home standard or whatever standard supersedes it as specified by EPA. The program has the following components:

Education: The program will educate residential new construction market stakeholders on energy-efficient home design and construction, and inform them

of Duquesne Light's incentives available for meeting the ENERGY STAR Home requirements.

Rebates: The program will offer rebates to new homebuilders to encourage the adoption of ENERGY STAR recommended design practices and the installation of high-efficiency equipment and shell measures. The proposed incentives are designed to cover roughly 30% of the incremental cost of meeting the ENERGY STAR standard. At this time it is envisioned that the incentive will be $400 plus $0.10/kWh savings verified for each home.

Maximum Deadline for Rebates: The new construction sales cycle and project implementation period can be lengthy and often exceeds a year. Duquesne light will assess rebate deadlines for this program on a base-by-case basis.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 of all residential programs (see Figure 3 or 49). The Residential Program Coordinator and Residential Technician will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are processing homebuilder incentive payments as well as energy savings (kWh) and peak demand reductions (kW) reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 21: Savings by Design Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$35,501	$35,501	$35,501	$35,501	$35,501	$177,506
Admin	$277,818	$277,818	$277,818	$277,818	$277,818	$1,389,092

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 22: Savings by Design Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	12	12	12	12	12	59
Energy Savings (kWh)	81,800	81,800	81,800	81,800	81,800	409,000

Cost Effectiveness:

- TRC - 0.9
- NTG[25] – 100.0%
- Net TRC – 0.9

  There is no NTG research available or applicable to programs newly added to the portfolio in Phase III, these programs have a NTG of 100% applied herein.

3.2.6. Low-Income Sector Programs

Low-Income Sector (as defined by 66 Pa. C.S. § 2806.1) Programs include formatted descriptions of each program organized under the same headings as listed above for residential programs. As well, provide and detail all plans for achieving compliance with the June 11, 2015 Implementation Order. Include estimates of any applicable low-income carryover savings from Phase II, per the June 11, 2015 Implementation Order.[26]

Title: The Low Income Energy Efficiency Program (LIEEP) will be implemented during program years 2016 through 2020.

Objectives: The objective of LIEEP is to increase qualifying customers' comfort while reducing their energy consumption, costs and economic burden.

Target Market: The LIEEP provides energy efficiency services to households that are at or below 150% of the federal poverty income guidelines and are located in single-family and multifamily dwellings.

Program Description: LIEEP is an income-qualified program providing services designed to assist low-income households to conserve energy and reduce electricity costs. LIEEP relies on several contributing engagement channels to deliver program

[25] Ibid footnote 21

[26] The June 11, 2015 Implementation Order disallowed the inclusion of low-income participation in standard, non-low-income-specific residential programs in the calculation of savings towards the 5.5% low-income carve-out. *See June 11, 2015 Implementation Order at 69.*

services and achieve projected savings impacts and program cost-effectiveness, shown below:

Figure 23: Low Income Energy Efficiency Projected Savings

Low Income Program Portfolio*	MWH
Multifamily Housing Retrofit Program	8,912
Home Energy Reporting Program	12,731
Whole House Retrofit Program	3,819
Total	**25,463**

* Specialized programs serving only low income participants

Implementation Strategy: The LIEEP is implemented through delivery of portfolio comprised of the Multifamily Housing Retrofit Program, the Home Energy Reporting Program and the Whole House Retrofit Program. Each of these programmatic activities are uniquely tailored to serve the low income sector, and only the low income sector, consistent with the Commission's Phase III Implementation Order.

Low Income Multifamily Housing Retrofit Program: The program is operated in conjunction with the Public Agency Partnership Program (PAPP) that serves as a conduit to housing authority property inventories. See Section 3.3.4. Multifamily Housing Retrofit Program.

Low Income Home Energy Reporting Program: Specialized Low Income Home Energy Reports are provided to a targeted Low Income customer population of approximately 12,000 customers each year of the Phase III performance period. Savings impact measurement is based on documented savings comparing the program participant population energy use behavior to a low income non-participating control group. The remaining programmatic approaches and methodologies are consistent with Plan content described in the Residential Home Energy Reporting Program at Section 3.2.3.

Low Income Whole House Retrofit Program: Home audits and installation of low-income direct install measures (described below) will be provided at no cost to income qualified customers.

Duquesne Light will track low-income customer participation through its Program Management and Reporting Systems ("PMRS"). Through linkage to Duquesne Light's customer information system, PMRS confirms low income status and records savings achieved in low-income households.

Duquesne Light will refer confirmed low-income customers who participate in any of its general residential programs to its Act 129 low-income programs, its Universal Service programs, the Low-Income Home Energy Assistance Program ("LIHEAP"), low-income usage reduction program ("LIURP") as well as coordinate with natural gas

distribution companies (NGDC) and community based organizations to provide low-income services.

Duquesne Light will facilitate this coordination by inviting representatives from the NGDCs with overlapping service territories to its Act 129 Stakeholder meetings and will place the issue of Duquesne Light/NGDC coordination on the agenda of those meetings. Duquesne Light actively participated in several stakeholders meetings with NGDC.

Duquesne Light will also work with NGDCs to provide joint rebates when the NGDC provides rebates to customers above 150% of the federal poverty level and to provide inter-utility audits to customers whose total household income is above 150% of the federal poverty level when available.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. All of these program elements have been operating during the previous Act 129 Phases, these activities are not new to Duquesne Light's implementation team(s). Implementation CSP contract statements of work are performance-based, include production schedules, and; performance payments are tied to independent measurement. Provisions in CSP contract language provide for shifting funds from under-performing programs.

All programs in the LIEEP portfolio of programs will employ audit tools most applicable to programmatic needs and opportunities, and must also be capable of migrating data to PMRS. This functionality has proven problematic in Phase II operations and is an area for improvement in Phase III. Such data management and ramp-up delay risks will be mitigated through Phase III improvements to the PMRS upload capabilities, coupled with the process of selecting the CSP(s) with existing systems, processes and demonstrated capabilities to implement single family and multifamily residential audit programs that are cost-effective.

Anticipated Cost to Participating Customers: There is no cost to low income household participants for the services described under this program.

Ramp-up Strategy: All of these program elements have been operating during the previous Act 129 Phases, these activities are not new to Duquesne Light's implementation team(s). Other than performing the contracted launch activities contained in each CSP's Services Agreement statement of work, Duquesne Light does not anticipate lengthy or complex ramp-up activities. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: The LIEEP will be implemented through delivery of a programmatic portfolio comprised of the Multifamily Housing Retrofit Program, the Low Income Home Energy Reporting Program and the Whole House Retrofit Program. Marketing strategies for each are described below:

> Low Income Multifamily Housing Retrofit Program: The program will be marketed to low income multifamily housing facilities served under commercial

master-meter accounts in conjunction with the Public Agency Partnership Program (PAPP) that serves as a conduit to housing authority property inventories. See Section 3.3.4. Multifamily Housing Retrofit Program.

Low Income Home Energy Reporting Program: One-third of the approximately 35,000 confirmed low income customers will received specialized Low Income Home Energy Reports, each year of the Phase III performance period. The remaining programmatic approaches and methodologies are consistent with Plan content described in the Residential Home Energy Reporting Program at Section 3.2.3.

Low Income Whole House Retrofit Program: Residential customers will enter the program via the existing Duquesne Light Energy Insights online audit. Upon completion of the online audit, participants will be given an opportunity to pursue a comprehensive track audit that links to the Low Income Whole House Retrofit Program. Duquesne Light will conduct outreach and marketing activities alone and/or with a selected CSP. Additionally, it will, provide coordination with other programs, such as gas company efficiency programs and Keystone HELP.

Eligible Measures and Incentives: The LIEEP will be implemented through delivery of a programmatic portfolio comprised of the Multifamily Housing Retrofit Program, the Low Income Home Energy Reporting Program and the Whole House Retrofit Program. Eligible measures for each are described below (no customer incentives are provided under the LIEEP).

Low Income Multifamily Housing Retrofit Program: Measure identified in Figures 13 and 28 will be provided at qualifying facilities as direct-install measures; associated prescriptive rebate amounts in the referenced figures and not applicable.

Low Income Home Energy Reporting Program: Specialized Low Income Home Energy Reports are provided to a targeted Low Income customer population Savings impact measurement is based on documented savings comparing the program participant population energy use behavior to a low income non-participating control group.

Low Income Whole House Retrofit Program: Residential customers will enter the program via the existing Duquesne Light Energy Insights online audit. Upon completion of the online audit, participants will be given an opportunity to pursue a comprehensive track audit that links to the Low Income Whole House Retrofit Program. Consistent with the Phase II EE&C Plan filing, Partial Settlement Agreement, the Program will provide the following direct-install measures:

- Compact Fluorescent Lamps
- Faucet aerators (electric water heating)
- Night lights
- Refrigerator replacement
- Water heater pipe wrap (electric water heating)

- Water heater tank wrap (electric water heating)
- Attic, wall and floor insulation (electric space heating)
- Blower door resting and air sealing (electric space heating)
- Sealing Attic bypasses (electric space heating)
- Crawl space and heater insulation (electric space heating)
- Electric heating repair or replacement
- Duct insulation and repair (electric space heating)
- Calking and weather stripping (electric space heating)
- Heat pump water heaters (electric water heating)

Duquesne Light will pre-approve proposed projects with aggregate measure costs exceeding $2,000 on a case by case basis to ensure equitable use of program funding.

As with previous years of LIEEP services, and has been verified through independent audit, 14 measures are available at no cost to low-income customers. These measures offered to the low-income sector comprise 15 percent of the total measures offered. This exceeds the fraction of the electric consumption of the utility's low-income households divided by the total electricity consumption in the Duquesne Light territory by (8.4 percent).[27] For confirmation please see Duquesne Light's Y6 Annual Report, **Error! Reference source not found.** and **Error! Reference source not found.**.

Maximum Deadline for Rebates: The LIEEP participation, consistent with Commission's Phase III Implementation Order, is mutually exclusive of program participation with programs serving non-low income customer populations. As such, no standard, or other, prescriptive rebates are provided under this program and no "Maximum Deadline for Rebates" is applicable.

Program Start Date and Key Milestones: Refer to Section 12 Chart 1, Residential Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities are identified in the EM&V Related Program Content section, where there is a complete listing of the information that is provided to the Commission's statewide EE&C Evaluator. Duquesne will monitor and where possible, coordinate its planned whole house energy audits, especially in regard to LIEEP, with any statewide whole house programs that would benefit its customers.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes two dedicated full-time employees to perform management and coordination of all Act 129 residential programs (see Figure 3 or 49). The Residential Program Coordinator and Residential Technician will administer the program on a

[27] Act 129 includes a provision requiring electric distribution companies to offer a number of energy efficiency measures to low-income households that are "proportionate to those households' share of the total energy usage in the service territory." 66 Pa.C.S. §2806.1(b)(i)(G).

shared basis. The LIEEP will be implemented through delivery of a programmatic portfolio comprised of the Multifamily Housing Retrofit Program, the Low Income Home Energy Reporting Program and the Low Income Whole House Retrofit Program. These programs will each be implemented by specialized CSPs selected by competitive solicitation. .In the conduct of LIEEP management and oversight, Duquesne Light Customer Programs staff will also be supported by additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff.

Estimated Participation: The LIEEP will be implemented through delivery of a programmatic portfolio comprised of the Multifamily Housing Retrofit Program, the Low Income Home Energy Reporting Program and the Whole House Retrofit Program. Estimate participation for each program is addressed below:

Multifamily Housing Retrofit Program: Based on Phase II project impacts, this program is projected to retrofit approximately 240 multifamily housing facilities during the Phase III performance period.

Low Income Home Energy Reporting Program: Phase III participation is projected to be 35,000 confirmed low income customers.

Whole House Retrofit Program: Based on Phase II project level savings impacts, and projected Phase III savings targets, program participation is estimated at 1,100 per year or 5,500 houses treated during the Phase III performance period.

Estimated Participation: Determination of low-income segment mandated reductions requires interpretation of the following Act 129 language:

Estimated Program Budget:

Figure 24: Low Income Energy Efficiency Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$0	$0	$0	$0	$0	$0
Admin	$820,809	$820,809	$820,809	$820,809	$820,809	$4,104,045

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 25: Low Income Energy Efficiency Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	71	71	71	71	71	353
Energy Savings (kWh)	3,310,177	3,310,177	3,310,177	3,310,177	3,310,177	16,550,885

Cost Effectiveness:

- TRC - 0.9
- NTG[28] – 76.6%
- Net TRC – 0.7

3.3. Commercial/Industrial Small Sector Programs

Small Commercial/Industrial Sector (as defined by EDC Tariff) programs include formatted descriptions of each program organized under the same headings as listed previously for residential programs. Customers served under this sector are commercial and industrial customers having annual maximum monthly demand less than 300 kW. Programs serving this sector include the Express Efficiency Program, a portion of the Small Non-Residential Upstream Lighting Program and the Small Commercial Direct-Install Program and the Multifamily Housing Retrofit Program described below:

3.3.1. Express Efficiency Program Plan

Title: The Express Efficiency Program Plan will be implemented during program years 2016 through 2020.

Objectives: The Express Efficiency Program ("EXP") provides rebates to offset the higher cost of high-efficiency equipment when compared to standard efficiency equipment. Program incentives promote customer indifference to the higher cost of high-efficiency equipment and increase customer adoption of high-efficiency equipment.

Target Market: The EXP serves all Duquesne Light commercial and industrial customers with maximum demand less than 300 kW, that aren't already participating in other Act 129 program. Crosscutting impacts from residential sector upstream lighting programs are forecast and reported under the Express Efficiency Program.

[28] Ibid footnote 21

Program Description: The EXP provides incentives to offset the higher cost of high-efficiency equipment when compared to standard efficiency equipment. Customers submit rebate applications on-line, by mail or fax.

Implementation Strategy: The EXP is operated by the Duquesne Light core team or a designated CSP. Development of a Program Management Plan (PMP)[29] is one of several key tasks undertaken during program ramp-up. The PMP specifies and memorializes the procedural requirements for implementing the EXP. The PMP documents program policies and procedures, production plan, marketing plan, technical specifications, performance metrics, reporting requirements, data management and quality control. The PMP defines the processes for all incentive reservation and redemption, as well as program activity and impact reporting.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts, and provides early warning regarding program under- or over-subscription. Provisions in CSP contract language provide for shifting funds from under-performing programs. Operational requirements of the EXP have been thoroughly tested through six years of operating small C&I sector rebate programs. Duquesne Light does not anticipate implementation of the EXP to present any high-risk, developmental aspects.

Anticipated Cost to Participating Customers: Incentive payments offset a portion of the incrementally greater cost of high-efficiency equipment. Program measures and measure incentives are provided at Figure 28, participating customers pay the remaining portions of the measure incremental costs.

Ramp-up Strategy: This program originated as the Small Commercial and Industrial Umbrella Program launched on December 1, 2009 and will be operated through May 31, 2016 (Act 129 Phase I and Phase II). The Phase II program is updated and continued under the name Express Efficiency Program. Associated delivery processes will undergo incremental improvement, Duquesne Light does not anticipate ramp-up related challenges with this program. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Customers will have access to the EXP incentive applications through a link on Duquesne Light's Act 129 website. Duquesne Light will market the EXP under its Watt Choices branding.

Eligible Measures and Incentives: Prescriptive measures and associated rebate amounts are provided in the listing of eligible measures provided in Figure 28 at the end of this section.

Maximum Deadline for Rebates: The maximum deadlines for rebates paid by the EXP should be 180 days from installation of eligible energy efficiency measures.

Program Start Date and Key Milestones: Refer to Section 12 Chart 2, Small Commercial/Industrial Portfolio Program.

[29] CSP Agreement, Statement of Work Task 1 deliverable or as specified by Duquesne Light.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs (see Figure 3 or 49). The C&I Program Coordinator and Program Coordinator for Commercial sector programs will administer the program on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation (Small C&I): The primary metrics for program participation are processing incentive payments for the purchase and installation of energy efficiency equipment, rendering deemed savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 26: Express Efficiency Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$805,064	$805,064	$805,064	$805,064	$805,064	$4,025,322
Admin	$773,493	$773,493	$773,493	$773,493	$773,493	$3,867,466

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 27: Express Efficiency Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	1,313	1,313	1,313	1,313	1,313	6,566
Energy Savings (kWh)	7,029,511	7,029,511	7,029,511	7,029,511	7,029,511	35,147,555

Cost Effectiveness:

- TRC - 2.2

- NTG[30] – 52.0%
- Net TRC – 1.7

[30] Ibid footnote 21

Figure 28: Express Efficiency Program Eligible Measures

Nonresidential Measure	Unit	Rebate Amount Up to $/Unit
Lighting		
Screw-in Compact Fluorescent Lamp: 5-25 watts	Lamp	$ 1.00
Screw-in Compact Fluorescent Lamp: ≥26 watts	Lamp	$ 1.50
Interior compact fluorescent fixture 5-25 watts	fixture	$ 15.00
Interior compact fluorescent fixture, 26-65 watts	fixture	$ 15.00
Interior compact fluorescent fixture, 66-90 watts	fixture	$ 15.00
Interior compact fluorescent fixture, >90 watts	fixture	$ 15.00
Exterior compact fluorescent fixture, <=70W replacement fixture	fixture	$ 15.00
Cold cathode fluorescent lamp: 2-18 watts	lamp	$ 5.00
Integrated ballast ceramic metal halide PAR lamp	lamp	$ 10.00
Induction lamp and fixture, 55-100 watts	fixture	$ 45.00
Induction lamp and fixture >100 watts	fixture	$ 100.00
T5-4 ft 1 lamp HO electronic ballast	1 lamp and 1 ballast	$ 10.00
T5-4 ft 2 lamp HO electronic ballast	2 lamps and 1 ballast	$ 15.00
T5 4 ft 3 lamp HO electronic ballast	3 lamps and 1 ballast	$ 20.00
T5 4 ft 4 Lamp HO Electronic ballast	4 lamps and 1 ballast	$ 25.00
T5 4 ft 6 lamp HO electronic ballast	6 lamps and 2 ballast	$ 40.00
T5 - 4' 8 Lamp - HO - Electronic Ballast	8 lamps and 2 ballast	$ 75.00
T8-28W replacing 32W, lamp only (1st to 2nd gen retrofit) Δ4W	Lamp	$ 1.00
T8-25W replacing 32W, lamp only (1st to 3rd gen retrofit) Δ7W	Lamp	$ 1.00
T8 25W replacing 28W, lamp only (2nd to 3rd gen retrofit) Δ3W	Lamp	$ 1.00
LED 8.5W 2' 1 Lamp - Integrated Driver	1 Lamp	$ 2.50
LED 8.5W 2' 2 Lamps - Integrated Driver	2 Lamps	$ 3.50
LED 8.5W 2' 3 Lamps - Integrated Driver	3 Lamps	$ 4.00
LED 8.5W 2' 4 Lamps - Integrated Driver	4 Lamps	$ 5.00
LED 10.5W 3' 1 Lamp - Integrated Driver	1 Lamp	$ 3.00
LED 10.5W 3' 2 Lamps - Integrated Driver	2 Lamps	$ 5.00
LED 10.5W 3' 3 Lamps - Integrated Driver	3 Lamps	$ 8.00
LED 10.5W 3' 4 Lamps - Integrated Driver	4 Lamps	$ 10.00
LED 12W 4' 1 Lamp - Integrated Driver	1 Lamp	$ 3.50
LED 12W 4' 2 Lamps - Integrated Driver	2 Lamps	$ 5.00
LED 12W 4' 3 Lamps - Integrated Driver	3 Lamps	$ 8.00
LED 12W 4' 4 Lamps - Integrated Driver	4 Lamps	$ 10.00
LED 12W 4' 6 Lamps - Integrated Driver	6 Lamps	$ 15.00
LED 44W 8' 2 Lamps - Integrated Driver	2 Lamps	$ 7.00
Remove 2 ft linear fluorescent lamp (like technology conversions)	lamp	$ 10.00
Remove 3 ft linear fluorescent lamp (like technology conversions)	lamp	$ 10.00
Remove 4 ft linear fluorescent lamp (like technology conversions)	lamp	$ 10.00
Remove 8 ft linear fluorescent lamp (like technology conversions)	lamp	$ 10.00
Metal Halide, Pulse-Start Fixture, Exterior, 175W-320W	fixture	$ 50.00
Metal Halide, Pulse-Start Fixture, Exterior >320W	fixture	$ 70.00
Metal Halide, Pulse-Start Fixture, Interior 175 W	fixture	$ 50.00
Metal Halide, Pulse-Start Fixture, Interior 250 W	fixture	$ 50.00
Metal Halide, Pulse-Start Fixture, Interior 300W	fixture	$ 55.00
Metal Halide, Pulse-Start Fixture, Interior 320W	fixture	$ 55.00
Metal Halide, Pulse-Start Fixture, Interior 350W	fixture	$ 60.00
Metal Halide, Pulse-Start Fixture, Interior 750W	fixture	$ 100.00

Figure 28: Express Efficiency Program Eligible Measures – *continued* -

Nonresidential Measure	Unit	Rebate Amount Up to $/Unit
Occupancy sensor, ceiling or wall mounted, <500W controlled	sensor	$ 18.00
Occupancy sensor, ceiling or wall mounted, ≥500W controlled	sensor	$ 25.00
Occupancy sensor, high bay fixture-integrated	sensor	$ 20.00
Dimming electronic ballast, for daylighting	ballast	$ 15.00
Photocell	photocell	$ 15.00
Time clock	time clock	$ 20.00
Single-Sided LED Exit Signs replacing Incandescent Exit Signs	fixture	$ 20.00
Dual-Sided LED Exit Signs replacing Incandescent Exit Signs	fixture	$ 20.00
Single-Sided LED Exit Signs replacing Fluorescent Exit Signs	fixture	$ 20.00
Dual-Sided LED Exit Signs replacing Fluorescent Exit Signs	fixture	$ 20.00
LED Reflector 4-8W	LED	$ 4.00
LED Reflector 9-13W	LED	$ 4.00
LED Reflector 14-18W	LED	$ 4.00
LED Reflector 19-23W	LED	$ 4.00
LED A-Line 6-17W	LED	$ 2.00
LED Specialty 2-10W	LED	$ 2.00
LED channel signage, indoor ≤2 ft	Letter	$ 5.00
LED channel signage, outdoor ≤ 2ft	Letter	$ 5.00
LED channel signage, outdoor > 2ft	Letter	$ 12.00
Refrigeration		
Night Cover for Open Refrigerated Display Case	linear ft	$ 9.00
Auto-Closer for Walk-In Cooler Doors	closer	$ 50.00
Auto-Closer for Walk-In Freezer Doors	closer	$ 50.00
Door with anti-sweat heater for vertical frozen food display case	linear ft	$ 45.00
ECM Motor for walk-in freezer or cooler (TRM 3.5.3)	motor	$ 50.00
ECM Motor for Reach-In Refrigerated Cases (TRM 3.5.2)	motor	$ 50.00
Insulation on Existing Bare Refrigeration Suction Pipes	linear ft	$ 2.00
Evaporative Fan controller for Walk-in Cooler	controller	$ 60.00
Night Cover for Open Freezer Case	linear ft	$ 9.00
Strip Curtains, Walk-In Cooler - Supermarket	Square Feet	$ 3.00
Strip Curtains, Walk-In Cooler - Convenience Store	Square Feet	$ 3.00
Strip Curtains, Walk-In Cooler - Restaurant	Square Feet	$ 3.00
Strip Curtains, Walk-In Freezer - Supermarket	Square Feet	$ 3.00
Strip Curtains, Walk-In Freezer - Convenience Store	Square Feet	$ 3.00
Strip Curtains, Walk-In Freezer - Restaurant	Square Feet	$ 3.00
Strip Curtains, Refrigerated Warehouse	Square Feet	$ 3.00
Anti-Sweat Heat Controls based on humidity	circuit	$ 200.00
Other		
VFD - HVAC Pump Motor	HP	$ 75.00
VFD - HVAC Fan Motor	HP	$ 75.00
VFD - Air Compressor Motor	HP	$ 75.00
Packaged Terminal AC Tier 1:11.0 EER	Ton	$ 60.00
Packaged terminal AC, Tier 2:12.0 EER	Ton	$ 65.00
Packaged terminal AC, Tier 3: 13.0 EER	Ton	$ 70.00
Custom, C&I	kWh	$ 0.08

3.3.2. Small Non-Residential Upstream Lighting Program

Title: The Small Non-Residential Upstream Lighting Program will be implemented during program years 2016 through 2020.

Objectives: The Small Non-Residential Upstream Lighting Program will result in increased uptake of energy efficient lighting technologies by C&I end-use customers. Successes of residential upstream lighting programs demonstrate "instant rebates" are an effective means to promote energy efficiency lighting products. For time-strapped C&I business customers, present onerous rebate application requirements and lengthy rebate processing lead times present significant and growing barriers to energy efficiency program participation.

Providing rebates, or customer incentives, directly to manufacturers and distributors addresses these significant barriers. The program will put in place processes required to satisfy C&I program documentary requirements to extend upstream lighting programs into the C&I sector.

Target Market: This program targets small C&I customers that would ordinarily obtain lighting equipment through commercial, business-to-business, lighting equipment contractors and distributors. To facilitate the stated objectives, key high-volume lighting equipment distributors become targeted program participants. Crosscutting impacts from residential sector upstream lighting programs are forecast and reported under the Express Efficiency Program.

Program Description: The program will provide incentives for efficient lighting products directly to technology manufacturer distributors to offset the higher cost, and thereby drive uptake of, the most efficient lighting equipment options.

Implementation Strategy: An implementation contractor will develop a distributor participation agreement, identify and enroll targeted lighting distributors, provide participating distributor training, process applications, track and report program activity, perform customer site inspections (as required) and provide program EM&V support.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts, and provides early warning regarding program under- or over-subscription. CSP implementation contract statements of work provide pay-for-performance based compensation. Additionally, provisions in CSP contract language provide for shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: Program lighting distributor instant rebates offset a portion of the incrementally greater cost of high-efficiency equipment. Participating customers pay the remaining portions of the measure incremental costs.

Ramp-up Strategy: Implementation services RFPs will be issued, responses will be reviewed and contract statements of work will be executed according to the implementations schedules provided in Section 12. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Duquesne Light will coordinate and conduct a marketing and advertising campaign in support of the program. The implementation contractor (CSP) will work closely with Duquesne Light to align overall marketing themes and messages with participating distributor engagement.

The CSP will develop and deliver distributor presentations through a combination of phone calls, webinars and office visits. Distributor presentations will demonstrate the financial benefits of promoting target high efficiency lighting measures, through increase sales revenue and program incentives.

Three to five weeks after program promotion begins, the CSP will reach out to targeted distributors to obtain signed participation agreements.

Eligible Measures and Incentives: Initially the program will focus on LED technology parabolic reflector lamp (PAR) 20, 30, 38 and MR16 lighting technologies. Eligible measures will be adopted going forward as indicated by customer demand, need and interest, savings impact potential and cost-effectiveness determination.

Maximum Deadlines for Rebates: The Small Non-Residential Upstream Lighting Program facilitates "instant rebates" where program incentives are paid to participating manufacturers and distributors to reduce the cost efficient lighting products; removes program participation time and complexity for consumers. Program implementers provide monthly invoices therefore "deadlines for rebates" are not applicable.

Program Start Date and Key Milestones: Refer to Section 12 Chart 2, Small Commercial/Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs (see Figure 3 or 49). The C&I Program Coordinator and Program Coordinator for Commercial sector programs will administer the program on a shared basis. Primary implementation tasks are to be undertaken by a specialized CSP, selected by competitive solicitation. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering, marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation (Small C&I): The primary metrics for program participation are processing incentive payments for the purchase and installation of energy efficiency equipment, rendering deemed savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 29: Small Non-Residential Upstream Lighting Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$286,238	$286,238	$286,238	$286,238	$286,238	$1,431,190
Admin	$272,988	$272,988	$272,988	$272,988	$272,988	$1,364,942

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 30: Small Non-Residential Upstream Lighting Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	1,170	1,170	1,170	1,170	1,170	5,850
Energy Savings (kWh)	3,892,866	3,892,866	3,892,866	3,892,866	3,892,866	19,464,329

Cost Effectiveness:

- TRC - 2.2
- NTG[31] – 100.0%
- Net TRC – 2.2

  There is no NTG research available or applicable to programs newly added to the portfolio in Phase III, these programs have a NTG of 100% applied herein.

3.3.3. Small Commercial Direct Install Program

Title: The Commercial Sector Small Commercial Direct Install Program (SCDI) will be implemented during program years 2016 through 2020.

Objectives: The SCDI program will continue Phase II success in addressing small and medium C&I customer sector specific barriers. Barriers to program participation included limited capital resources, high cost of capital (interest rates), lack of expertise and conflicting priorities. Customers in these segments are often subject to "split-incentives," where electric bill paying customers are tenants, not property owners. Owners do not pay the electric bills, so they are not motivated to upgrade energy using

[31] Ibid footnote 21

equipment in order to save on electric bills; electric bill paying tenants are not motivated to upgrade properties they do not own.

The Phase II direct install program design successfully addressed these barriers by providing no cost efficiency upgrades, whereby landlords received no cost building upgrades and small business tenants benefited from lower electric bills. The program will be retained for Phase III.

Target Market: The program targets Duquesne Light commercial and industrial customers with monthly demand less than 300 kW.

Program Description: By providing for the direct installation of energy efficiency measures at small and medium C&I customer facilities, the Small Commercial Direct Install Program will produce cost-effective, long-term peak demand and energy savings. The program will be delivered in a staged delivery approach to provide program services in specific geographic areas at different time periods. This approach will allow for a concentrated, directed and service area wide program.

Implementation Strategy: The primary delivery mechanism for the program will be equipment installation contractors that are selected through a competitive bidding process. Prospective customer regions will be targeted for cost effective energy efficiency installations. Third party contractors will survey a customer's site, obtain written approval from the customer and install energy efficiency equipment at their site. Used equipment will be properly disposed according to all state, local and federal regulations. Duquesne Light will conduct random inspections of completed sites.

Program Issues, Risks and Risk Management Strategy: This program was launched in Phase II and successfully achieved projected savings impacts on-time and under budget. The program will be continued in Phase III and program risk is mitigated by replicating proven approaches and processes. All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts, and provides early warning regarding program under- or over-subscription. CSP implementation contract statements of work include pay-for-performance compensation. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: Program services will be provided at no or low cost to participating customers. Participating customers may have to pay for the installation of non-standard program measures and incidental project costs not directly associated with implementation of pre-approved program measures.

Ramp-up Strategy: This program was launched in Phase II and successfully achieved projected savings impacts on-time and under budget. The program will be continued in Phase III and program ramp-up will be minimized by replicating the proven approach and processes. Implementation services RFPs will be issued, responses reviewed and contract statements of work executed according to the implementations schedules provided in Section 12. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: The selected implementation CSP(s) will canvass project sites and propose projects to tenants and owners, as required, to obtain program enrollment. Services will be posted on Duquesne Light's Act 129 website. Additionally, CSPs can conduct outreach through participation and membership in selected key trade associations, attendance at key trade shows and sponsorship of training events. CSPs will be expected to use their unique market segment expertise to craft compelling program participation messages for key customer decision makers.

Eligible Measures and Incentives: Based on Phase II results and forecast changes in applicable measure technologies, Duquesne Light anticipates deploying the following selected measures, as applicable to each unique site:

- Screw-In LED lamps, reflector lamps and exit signs
- LED linear lighting
- T5HO high bay lighting
- Compressed air measures
- Pump and Fan Variable Frequency Drives
- Refrigeration Measures
    - LED refrigerated case lighting
    - Display case night covers
    - Walk-in cooler and freezer
        - Auto closers
        - Auto door closers
    - Electronically commutated evaporator motors
    - Display case Anti Sweat Heater Controls

Maximum Deadline for Rebates: No customer rebates are provided by this program since measures are directly installed at no direct cost to the customer.

Program Start Date and Key Milestones: Refer to Section 12, Chart 2: Small Commercial/Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on the cost of the project (as no customer incentives are provided). Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs (see Figure 3 or 49). The C&I Program Coordinator and Program Coordinator for Commercial sector programs will administer the program on a shared basis. Primary implementation tasks are to be undertaken by a specialized CSP, selected by competitive solicitation. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering,

marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Estimated Participation: The primary metrics for program participation will be completed projects. During the Phase III program period, Duquesne Light estimates 500 projects will be completed (based on 20 to 30 technology units per project site). Program activity cost and savings is reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 31: Small Commercial Direct-Install Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$88,567	$88,567	$88,567	$88,567	$88,567	$442,836
Admin	$845,683	$845,683	$845,683	$845,683	$845,683	$4,228,414

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 32: Small Commercial Direct-Install Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	256	256	256	256	256	1,282
Energy Savings (kWh)	2,186,846	2,186,846	2,186,846	2,186,846	2,186,846	10,934,231

Cost-Effectiveness:

- TRC - 1.8
- NTG[32] – 99.3%
- Net TRC – 1.8

[32] Ibid footnote 21

3.3.4. Multifamily Housing Retrofit Program

Title: The Multifamily Housing Retrofit Program will be implemented during program years 2016 and 2020.

Objectives: The Multifamily Housing Retrofit Program will increase multifamily owner/operator energy efficiency program participation by providing services tailored to address market segment specific barriers to entry.

Target Market: More than 26% of residential building stock in Duquesne Light's service territory is multifamily housing. The program targets a subset of this building stock comprised of dwelling units for income qualified occupants. The majority of the targeted building stock receives electric service under commercial tariff master-meter service accounts.

Program Description: Program services include the administration of energy efficiency audits, technical assistance for measure level project review and bundling, property aggregation, contractor negotiation and equipment bulk purchasing. The multifamily market manager will integrate funding sources to include program and agency co-funding, performance contracting, grant funding and available financing options. Services also include processing rebate applications and other funding source documentary requirements as well as applicable project TRC screening.

Implementation Strategy: The program is operated in conjunction with the Public Agency Partnership Program (PAPP) that serves as a conduit to housing authority property inventories. A specialized CSP will be selected by competitive solicitation to perform in the primary role of program implementation.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. The program was successfully introduced in Phase II and developmental program risks are considered to be minimal.

Anticipated Cost to Participating Customers: The program will be implemented in conjunction with the Public Agency Partnership Program (PAPP). The PAPP partners with jurisdictional agencies, such as housing authorities, in addition to private owners of income qualified facilities, to fund portions of identified energy efficiency projects consistent with adopted project agreements. The cost-share to the participating jurisdictions or property owners is negotiated on a case-by-case basis, depending upon the availability of funding and finance options.

Ramp-up Strategy: Implementation services RFPs will be issued, responses reviewed and contract statements of work executed according to the implementations schedules provided in Section 12. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Local government agencies are engaged directly by Duquesne Light under the PAPP model. Each partnering agency assists in communicating with government departments and jurisdictional agencies, including targeted housing

authorities. The multifamily market manager will work with housing authority representatives toward a systematic inventory of housing stock and provision of program services to affect building energy efficiency retrofits.

Eligible Measures and Incentives: Prescriptive measure descriptions, unit savings, and incentive amounts are included in this Plan one time only at Section 3.3.1 Figure 28. Measure cost based offsetting program incentives may be adjusted per program project agreements, as well as local government needs and resources.

Maximum Deadline for Rebates: This program serves large institutional customers that have engaged in large and complex projects that may take 18 months or more between project commitment and measurement. Program deadlines will be assessed by Duquesne Light on a case-by-case basis.

Program Start Date and Key Milestones: Refer to Section 12 Chart 2, Small Commercial/Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs (see Figure 3 or 49). The C&I Program Coordinator and Program Coordinator for Commercial sector programs will administer the program on a shared basis. Primary implementation tasks are to be undertaken by a specialized CSP, selected by competitive solicitation. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering, marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation will be projects completed and project savings impacts reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 33: Multifamily Housing Retrofit Program Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$199,733	$199,733	$199,733	$199,733	$199,733	$998,666
Admin	$651,100	$651,100	$651,100	$651,100	$651,100	$3,255,502

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 34: Multifamily Housing Retrofit Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	110	110	110	110	110	551
Energy Savings (kWh)	1,782,403	1,782,403	1,782,403	1,782,403	1,782,403	8,912,014

Cost Effectiveness:

- TRC - 1.9
- NTG[33] – 94.6%
- Net TRC – 1.8

3.4. Commercial/Industrial Large Sector Programs

Large Commercial/Industrial Sector Programs include formatted descriptions of each program organized under the same headings as listed previously for residential and small commercial and industrial sector programs. Customers served under this sector are commercial and industrial customers having annual maximum demand equal to or greater than 300 kW. Two programs serve this sector, the Commercial Efficiency Program, a portion of the Large Non-Residential Upstream Lighting Program and the Industrial Efficiency Program.

3.4.1. Commercial Efficiency Program

Title: The Commercial Efficiency Program (CEP) will be implemented during program years 2016 through 2020.

Objectives: The CEP provides for the payment of incentives to offset the higher cost of high-efficiency equipment when compared to standards efficiency equipment. CEP energy audits will provide business customers a readily available, reliable source of information about their energy use and outline ways to save energy, that when implemented, will result in energy savings, reduced operating costs, lowered carbon emissions and improved air quality. The CEP will employ targeted customer engagement channels to assist customers to overcome unique, segment specific, barriers to energy efficiency program participation.

[33] Ibid footnote 21

Target Market: Commercial sector customers having annual maximum demand equal to or greater than 300 kW.

Program Description: The CEP helps commercial customers to assess the potential for energy efficiency project implementation, cost and energy savings, and, for appropriate customers, provides follow-through by installing measures and verifying savings. Program components include auditing of energy use, provision of targeted financing and incentives, project management and installation of retrofit measures, training, and technical assistance. Energy audits provide business customers a readily available, reliable source of information about their energy use and outline ways to save energy that, when implemented, will result in energy savings, reduced operating costs, lowered carbon emissions, and improved air quality.

Implementation Strategy: The CEP is operated by the Duquesne Light core team and selected specialized CSPs that will assist with customer engagement and program uptake.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. CSP contract statements of work include pay-for-performance compensation provisions. Additionally, provisions in CSP contract language provide for shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: Program incentive payments will offset a portion of the incrementally greater cost of recommended high-efficiency equipment. The incentive levels, or the percentage of incremental measure cost, offset by program incentives, is established under the Express Efficiency Program (see Figure 28). Participating customers pay the remaining amounts.

Ramp-up Strategy: This program was launched on December 1, 2009 and will continue through Phase III of Act 129. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Customers will have access to CEP incentive applications through a link on Duquesne Light's Act 129 website. Specialized customer engagement channels will be utilized, tailored to overcome market segment specific barriers to program participation. Duquesne Light will select CSP "Market Managers" through competitive solicitation that are specialized at reaching the following target markets:

- The Office Building customer segment
- The Retail Stores customer segment*

**Separate solicitations may address engagement of retails stores, grocery stores and restaurants as characteristics of the segments vary significantly.*

The selected CSP Market Managers will raise target market awareness of program service offerings to the commercial office building and retail store owners, operators and tenants through strategies that include hosting and sponsoring of Webinars, and the development and dissemination of general and specific collateral marketing materials

via direct mail, email and the Internet. Additionally, CSP Market Managers will conduct outreach through participation and membership in selected key trade associations, attendance at key trade shows and sponsorship of training events. CSP Market Managers use their unique market segment expertise to craft compelling program participation messages for key customer decision makers.

Eligible Measures and Incentives: Program Eligible measure descriptions, unit savings, and incentive amounts are included in this Plan one time only at Section 3.3.1 Figure 28.

Maximum Deadline for Rebates: This program serves large commercial customers that have engaged in large and complex projects that may take 18 months or more between project commitment and measurement. Program deadlines will be assessed by Duquesne Light on a case-by-case basis.

Program Start Date and Key Schedule Milestones: Refer to Section 12 Chart 3, Large Commercial/Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs (see Figure 3 or 49). The C&I Program Coordinator will administer the program. CSP market mangers for the office building and retail stores market segments will be selected by competitive solicitation and will undertake implementation activities for these engagement channels. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering, marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are processing incentive payments for the purchase and installation of energy efficiency equipment rendering deemed savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 35: Commercial Efficiency Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$939,855	$939,855	$939,855	$939,855	$939,855	$4,699,273
Admin	$896,573	$896,573	$896,573	$896,573	$896,573	$4,482,863

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 36: Commercial Efficiency Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	1,132	1,132	1,132	1,132	1,132	5,660
Energy Savings (kWh)	10,115,057	10,115,057	10,115,057	10,115,057	10,115,057	50,575,285

Cost-Effectiveness:

- TRC - 1.9
- NTG[34] – 52.0%
- Net TRC – 1.6

3.4.2. Industrial Efficiency Program

Title: The Industrial Efficiency Program (IEP) will be implemented during program years 2016 through 2020.

Objectives: The IEP primary focus provides for the payment of incentives to offset the higher cost of high-efficiency equipment when compared to standard efficiency equipment. IEP energy audits will provide business customers a readily available, reliable source of information about their energy use and outline ways to save energy that when implemented, will result in energy savings, reduced operating costs, lowered carbon emissions and improved air quality. The IEP will employ targeted customer engagement channels to assist customers to overcome unique, segment specific, barriers to energy efficiency program participation.

[34] Ibid foot note 21

Target Market: Industrial sector customers having annual maximum demand equal to or greater than 300 kW.

Program Description: The IEP helps industrial customers assess the potential for energy efficiency project implementation, cost and energy savings, and, for appropriate customers, provides follow-through by installing measures and verifying savings. Program components include auditing of energy use, provision of targeted financing and incentives, project management and installation of retrofit measures, training, and technical assistance. Energy audits provide business customers a readily available, reliable source of information about their energy use and outline ways to save energy that, when implemented, will result in energy savings, reduced operating costs, lowered carbon emissions, and improved air quality.

Implementation Strategy: The IEP is operated by the Duquesne Light core team and selected specialized CSPs that will assist with customer engagement and program uptake.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: Program incentive payments will offset a portion of the incrementally greater cost of recommended high-efficiency equipment. The incentive levels, or the percentage of incremental measure cost, offset by program incentives, is established under the Express Efficiency Program. Participating customers pay the remaining amounts.

Ramp-up Strategy: This program was launched on December 1, 2009 and will continue through Phase III of Act 129. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Customers will have access to IEP incentive applications through a link on Duquesne Light's Act 129 website. Specialized customer engagement channels will be utilized, tailored to overcome market segment specific barriers to program participation. Duquesne Light will select CSP "Market Managers" through competitive solicitation seeking innovative approaches and demonstrated experience providing services specialization for reaching the following target markets:

- The Primary Metals customer segment
- The Chemical Products customer segment

The selected CSP Market Managers will raise targeted market awareness and assist Duquesne Light with delivering Program service offerings to these industrial process dominated segments. Priority barriers for these segments are program complexity and hassle factor associated with EE program participation. Program services take a "hands-on" approach to reduce customer requirements throughout the process (project identification, equipment installation and incentive processing).

Customers cite, limited resources, demanding production targets, managers and staff occupied meetings related to their internal obligations and have few resources for activities seen as peripheral. Program services focus on demonstrating the linkage between efficiency improvements and achieving primary manufacturing goals and project return on investment.

Program drivers contrast with Commercial sector program because Program funding is *not* primarily used to offset the incrementally high costs of various electric end-uses (lighting, HVAC, etc.). Industrial process customers are focused on production bottom lines and corporate hurdle rates. Their large and complex projects are assisted by development of detailed feasibility studies.

Industrial process customers are unwilling to risk shutdown cause by unproven processes and equipment, and are wary of biased advice from third parties. The Program promotes proven, commercially available and documented measures; it established credibility through client referrals, trade allies and regional organizations; delivers manufacturer neutral equipment recommendations; builds on repeat projects and peer-to-peer referrals.

Eligible Measures and Incentives: Program Eligible measure descriptions, unit savings, and incentive amounts are included in this Plan one time only at Section 3.3.1 Figure 28.

Maximum Deadline for Rebates: This program serves large industrial customers that have engaged in large and complex projects that may take 18 months or more between project commitment and measurement. Program deadlines will be assessed by Duquesne Light on a case-by-case basis.

Program Start Date and Key Schedule Milestones: Refer to Section 12 Chart 3, Large Commercial/Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs (see Figure 3 or 49). The C&I Program Coordinator will administer the program, with support by the Commercial sector Coordinator. CSP market mangers for the office building and retail stores market segments will be selected by competitive solicitation and will undertake implementation activities for these engagement channels. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering, marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are processing incentive payments for the purchase and installation of energy efficiency equipment rendering deemed savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 37: Industrial Efficiency Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$1,561,394	$1,561,394	$1,561,394	$1,561,394	$1,561,394	$7,806,972
Admin	$1,489,489	$1,489,489	$1,489,489	$1,489,489	$1,489,489	$7,447,446

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 38: Industrial Efficiency Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	1,881	1,881	1,881	1,881	1,881	9,403
Energy Savings (kWh)	16,804,293	16,804,293	16,804,293	16,804,293	16,804,293	84,021,466

Cost-Effectiveness:

- TRC - 1.9
- NTG[35] – 78.0%
- Net TRC – 1.8

3.4.3. Large Non-Residential Upstream Lighting Program

Title: Large Non-Residential Upstream Lighting Program will be implemented during program years 2016 through 2020.

Objectives: The Large Non-Residential Upstream Lighting Program will result in increased uptake of energy efficient lighting technologies by C&I end-use customers. Successes of residential upstream lighting programs demonstrate "instant rebates" are an effective means to promote energy efficiency lighting products. For time-strapped

[35] Ibid footnote 21

C&I business customers, present onerous rebate application requirements and lengthy rebate processing lead times present significant and growing barriers to energy efficiency program participation.

Providing rebates, or customer incentives, directly to manufacturers and distributors addresses these significant barriers. The program will put in place processes required to satisfy C&I program documentary requirements to extend upstream lighting programs into the C&I sector.

Target Market: Large C&I customers that would ordinarily obtain lighting equipment through commercial, business-to-business, lighting equipment contractors and distributors will be the target market for this program. To facilitate the stated objectives, key high-volume lighting equipment distributors become targeted program participants.

Program Description: The program will provide incentives for efficient lighting products directly to technology manufacturer distributors to offset the higher cost, and thereby drive uptake of, the most efficient lighting equipment options.

Implementation Strategy: An implementation contractor will develop a distributor participation agreement, identify and enroll targeted lighting distributors, provide participating distributor training, process applications, track and report program activity, perform customer site inspections (as required) and provide program EM&V support.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts, and provides early warning regarding program under- or over-subscription. Provisions in CSP contract language provide for shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: Incentive payments offset a portion of the incrementally greater cost of high-efficiency equipment. Incentive "levels" refer to the percentage of incremental measure cost offset by program incentives. Participating customers pay the remaining amounts.

Ramp-up Strategy: Implementation services RFPs will be issued, responses will be reviewed and contract statements of work will be executed according to the implementations schedules provided in Section 12. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Duquesne Light will coordinate and conduct a marketing and advertising campaign in support of the program. The implementation contractor (CSP) will work closely with Duquesne Light to align overall marketing themes and messages with participating distributor engagement.

The CSP will develop and deliver distributor presentations through a combination of phone calls, webinars and office visits. Distributor presentations will demonstrate the financial benefits of promoting target high efficiency lighting measures, through increase sales revenue and program incentives.

Three to five weeks after program promotion begins, the CSP will reach out to targeted distributors to obtain signed participation agreements.

Eligible Measures and Incentives: Initially the program will focus on LED technology parabolic reflector lamp (PAR) 20, 30, 38 and MR16 lighting technologies. Eligible measures will be adopted going forward as indicated by savings impact potential and cost-effectiveness.

Maximum Deadline for Rebates: The Large Non-Residential Upstream Lighting Program facilitates "instant rebates" where program incentives are paid to participating manufacturers and distributors to reduce the cost efficient lighting products; removes program participation time and complexity for consumers. Program implementers provide monthly invoices "deadlines for rebates" are not applicable.

Program Start Date and Key Milestones: Refer to Section 12 Chart 3, Large Commercial/Industrial Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs (see Figure 3 or 49). The Commercial Program Coordinator will administer the program, with support by the C&I Program Coordinator. A specialized implementation CSP will be selected by competitive solicitation and will undertake primary responsibility for implementing this program. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering, marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are processing incentive payments for the purchase and installation of energy efficiency equipment, rendering deemed savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 39: Large Non-Residential Upstream Lighting Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$690,683	$690,683	$690,683	$690,683	$690,683	$3,453,417
Admin	$658,713	$658,713	$658,713	$658,713	$658,713	$3,293,563

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 40: Large Non-Residential Upstream Lighting Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	2,823	2,823	2,823	2,823	2,823	14,115
Energy Savings (kWh)	9,393,366	9,393,366	9,393,366	9,393,366	9,393,366	46,966,828

Cost-Effectiveness:

- TRC - 2.2
- NTG[36] – 100.0%
- Net TRC – 2.2

  There is no NTG research available or applicable to programs newly added to the portfolio in Phase III, these programs have a NTG of 100% applied herein.

3.5. Governmental/Educational/Non-Profit Sector (as defined by 66 Pa. C.S. § 2806.1) Programs

Programs - include formatted descriptions of each program organized under the same headings as listed above for other sector programs**.** As well, provide and detail all plans for achieving compliance with the June 11, 2015 Implementation Order.

3.5.1. Public Agency Partnership Program

Title: The Public Agency Partnership Program (PAPP) will be implemented during program years 2016 through 2020.

Objectives: PAPP engages local government in a partnership to implement an Energy Efficiency Action Plan. Systematically inventory efficiency gain potential is present in local government departments and jurisdictional agencies. Execute project agreements to co-fund identified energy efficiency projects.

Target Market: Consistent with Act 129 the Public Agency Partnership Program serves customers that includes federal, state and local governments, municipalities and school districts as well as healthcare systems, institutions of higher education and other non-profit entities.

[36] Ibid footnote 21

Program Description: Public Agency Partnerships are established through execution of a Memorandum of Understanding (MOU) by and between Duquesne and selected local governmental agencies. The MOU establishes working groups comprised of Duquesne and agency representatives that identify project areas within agency departments (and jurisdictional agencies). Working groups define project scopes of service and establish project agreements to co-fund agreed to projects. The project agreements between Duquesne Light and Partnership agencies contain the terms to leverage local agency staff to reach, pre-screen and enroll program participants. The utility and the agency split specified program costs. The Partnership MOU puts in place dedicated contacts and a working group structure to identify and evaluate energy efficiency project opportunities within all governmental departments and sub-agencies.

Implementation Strategy: Key elements of the implementation process follow (1) Duquesne Light executes a Partnership MOU with the Public Agency (2) Duquesne Light facilitates working group meetings with the Public Agency and jurisdictional agencies (3) the working group collaborates on the development proposed project concept papers (4) public agency working group members obtain feedback on the proposed projects and the working group makes necessary adjustments to the concept paper (5) Duquesne Light prepares a project agreement and resolution for approval by the public agency governing body (6) Duquesne Light and the public agency implement the project plan consistent with the terms of the project agreement.

Patterned after successful programs operating in other parts of the country, a key element of the PAPP is co-funding by Duquesne Light and the Partnership agency of energy efficiency audits and measure implementation. PAPP will utilize local contractors and/or other survey and installation entities based on availability, cost, and quality of service. Whenever possible, PAPP will utilize non-profit, community based organizations to perform the energy efficiency surveys and measure installation.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. The PAPP was implemented successfully in both Phases I and II, and Duquesne Light assigns minimal developmental risks associated with implementing this program.

Anticipated Cost to Participating Customers: PAPP Partners will fund portions of identified energy efficiency projects consistent with adopted project agreements.

Ramp-up Strategy: This program was launched on December 1, 2009 and will continue through Phase III of Act 129. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Local government agencies are engage directly by Duquesne Light under the local government partnership model. Each partnering agency assists in communicating with all governmental departments and jurisdictional agencies.

Eligible Measures and Incentives: Prescriptive measure descriptions, unit savings, and incentive amounts are included in this Plan one time only at Section 3.3.1 Figure 28.

Maximum Deadline for Rebates: This program serves large institutional customers that have engaged in large and complex projects that may take 18 months or more between project commitment and measurement. Program deadlines will be assessed by Duquesne Light on a case-by-case basis.

Program Start Date and Key Milestones: Refer to Section 12 Chart 4, Governmental/Educational/Non-Profit Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs that include governmental/educational and nonprofit segments (see Figure 3 or 49). The Commercial Program Coordinator will administer the program, with support by the C&I Program Coordinator. A specialized implementation CSP will be selected by competitive solicitation and will support utility staff by providing direct customer interface, project development and engineering services as well as facilitating project meetings and logistical support. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering, marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are the negotiation of PAPP project agreements and the associated energy savings and peak demand reductions reflected in the Program Savings Targets table below:

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Estimated Program Budget:

Figure 41: Public Agency Partnership Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$869,184	$869,184	$869,184	$869,184	$869,184	$4,345,920
Admin	$829,156	$829,156	$829,156	$829,156	$829,156	$4,145,782

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 42: Public Agency Partnership Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	1,047	1,047	1,047	1,047	1,047	5,234
Energy Savings (kWh)	9,354,474	9,354,474	9,354,474	9,354,474	9,354,474	46,772,369

Cost-Effectiveness:

- TRC - 1.9
- NTG[37] – 52.0%
- Net TRC – 1.6

3.5.2. Community Education Energy Efficiency Program ("CEEP")

Title: The Community Education Energy Efficiency Program ("CEEP") will be implemented during the program years 2016 through 2020.

Objectives: The CEEP will prepare middle school and high school students to become energy efficiency auditors and provide hands-on training while they perform energy audits at their schools. The objective is to build the community capacity and early workforce development. Follow-on objectives will be to grow the program so that student energy auditors can "fan out" into their communities performing energy audits at small businesses and residential energy audits for income qualified populations.

Target Market: The CEEP will enroll middle schools and high schools through school districts recruited and selected by Duquesne Light. Students and lead teachers will be selected by participating districts, with the support of a suggested application process. Following the first year of the program, Duquesne Light or its qualified CSP will continue to engage program alumni in their energy workforce development through hiring alumni interns to co-lead the program. Lead teachers that participate will be trained to lead energy audits and conservation projects at their school for years to come.

Program Description: The CEEP will be comprised of a High School and Middle School Energy Auditing Program that will offer two 1-week trainings per summer to 25 students each for a total of 50 high school students trained per summer. The participating high school interns will earn a stipend and a Certificate in Energy Auditing. The 50 students per summer will represent 12 high schools in 12 districts. Each school will select 3-5 students and a lead teacher for the program. Both the student interns and the lead teachers will earn a stipend. Teachers will lead their school team during the training, and subsequently to:

[37] Ibid foot note 21

- Perform a school energy audit
- Develop an energy audit report
- Design a school conservation action plan
- Present their recommendations to their School Board
- Implement their Conservation Action Plan at their school, and
- Compete in a School Energy Conservation Competition between the participating schools

Implementation Strategy: Duquesne Light will issue a competitive bid solicitation for qualified firms with demonstrated capacity to implement similar programs. The selected team must have experience working with high school students on school energy auditing, conservation campaigns, green career education, and professional development. The program should use existing certificate curriculum to offer the 40-hour, 1-week training during which students will develop a School Energy Audit Report, a School Conservation Action Plan, and a presentation of their findings. Some groups may also decide to draft new or revised energy policies for their district as a final training deliverable.

The training will be consistent with industry standards for commercial building auditing and conservation and the Pennsylvania high school education standards, including the Common Core standards for English Language Arts and Math, the Career Technical Education (CTE) standards, and the Next Generation Science Standards. Core professional skills will be integrated throughout the training: teamwork, leadership, computer skills, communication, critical thinking, project management, and general soft skills like professional dress and behavior.

The central design theme of the curriculum and training is applied, experiential learning. Each of these modules will focus on evaluating what the students can do at the conclusion of the lesson. The 1-week training will include the execution of a school energy efficiency and conservation audit, transitioning often between in-class education on foundational concepts and small group practice of the concepts learned.

At the conclusion of training, students will deliver a School Energy Audit Report, School Conservation Action Plan, and presentation about the training site. These work products will provide a solid foundation to tailor the Report, Action Plan, and Presentation for their own Middle School or High School.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provides comprehensive oversight of program budgets and impacts and provides early warning regarding program under- or over-subscription. The Community Education Program is new in Phase III and is projected to ramp-up over a three-year period. Program designs are benchmarked to programs currently successful in other regions of the country. CSP implementation contracts will include pay-for-performance metrics. Additionally, provisions in CSP contract language provide for Program termination and the shifting funds from under-performing programs.

Anticipated Cost to Participating Customers: The CEEP is comprised of student certificated training to perform energy audits at their schools and later in the broader community. Audit recommendations may include prescriptive measures that are eligible for rebates (see Figure 28) that will offset a portion of the measure's incremental cost. Audited facility owner/operators will pay the remaining portion of the measure's incremental cost.

Ramp-up Strategy: Implementation services RFP will be issues, responses reviewed and contract executed in accordance with implementation schedule in Section 12. See Figure 1: Program Ramp-Rates for projected energy savings for each year of the Phase III performance period.

Marketing Strategy: Duquesne Light will work with the selected implementation CSP in the development and dissemination of collateral materials. Duquesne Light will leverage its extensive existing relationships with regional school districts developed during Act 129 Phases I & II and implementation of its popular K-5 School Energy Pledge Program.

Eligible Measures and Incentives: Student energy efficiency audits will identify and recommend measures identified in Figures 13 and 28, for residential and nonresidential measures, respectively.

Maximum Deadline for Rebates: This program does not provide customer rebates, no deadlines are applicable.

Program Start Date and Key Milestones: Refer to Section 12 Chart 4, Governmental/Educational/Non-Profit Portfolio Program.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan. Either enhanced or basic rigor verification is employed based on project scope, as identified in the EM&V Plan. Random samples shall comply with SWE Audit Plan confidence and precision levels.

Administrative Requirements: The Duquesne Light Customer Programs organization staffing plan includes three dedicated full-time employees to perform management and coordination of all Act 129 commercial and industrial sector programs all Act 129 commercial and industrial sector programs that include governmental/educational and nonprofit segments (see Figure 3 or 49). The Commercial Program Coordinator will administer the program, with support by the C&I Program Coordinator. A specialized implementation CSP will be selected by competitive solicitation and will undertake primary implementation responsibilities for implementing this program. In the conduct of program management and oversight, Duquesne Light's Customer Programs organization staff will also be supported by additional part-time engineering, marketing, purchasing, regulatory, data processing and clerical staff. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The baseline program targets 62 middle schools or high schools for participation in Phase III.

Estimated Program Budget:

Figure 43: Community Education EE Program Estimated Budget

Program Year	2016	2017	2018	2019	2020	Total
Incentives	$0	$0	$0	$0	$0	$0
Admin	$407,164	$407,164	$407,164	$407,164	$407,164	$2,035,820

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 44: Community Education EE Program Savings Targets

Program Year	2016	2017	2018	2019	2020	Total
On-Peak Demand Reduction (kW)	190	190	190	190	190	950
Energy Savings (kWh)	1,874,489	1,874,489	1,874,489	1,874,489	1,874,489	9,372,444

Cost-Effectiveness:

- TRC - 1.3
- NTG[38] – 100.0%
- Net TRC – 1.3

  There is no NTG research available or applicable to programs newly added to the portfolio in Phase III, these programs have a NTG of 100% applied herein.

3.6. Demand Management Program

Title: The Demand Management Program ("DMP") will be implemented during program years 2016 through 2020.

Objectives: The DMP program is designed reduce peak loads defined as four hour periods in which the PJM day ahead peak hour forecast is greater than 96% of its summer peak demand forecast. To affect this outcome, DMP will provide customer incentives through sub-programs accessible by all customer classes.

[38] Ibid footnote 21

Target Market: This program is made available to all Duquesne Light customers through a Residential, Small Commercial and Industrial Direct Load Control ("DLC") and a Large Commercial and Industrial Curtailment ("Curtailment") sub-program.

Program Description: The DMP will be implemented be a specialized CSP via competitive solicitation to achieve the overall demand reduction mandates. Duquesne Light anticipates the final program implemented will include two program components 1) a direct-load control (DLC) component targeting residential and/or small commercial and industrial customers, and 2) a large commercial and industrial customer curtailment component. Duquesne Light will select the best proposal to affect the mandated reductions, relevant performance metrics are provided herein.

Duquesne Light will be evaluating DLC sub-program program seeking options that are innovative such as "bring your own device" or "BYOD" initiative that will engage directly key technology partners with enabled demand response capabilities and OpenADR (auto-demand response) protocols. The existing installed base of DLC controllers from Act 129 Phase I will be explored as an additional source of potential participation.

Curtailment sub-program proposals will need to address participation by candidate customers that are enrolled and not enrolled in PJM's Emergency Load Response Program (ELRP). Customer performance incentives for customers enrolled in ELRP will be 50% of the performance incentive paid to candidate customers not enrolled in PJM's ELRP.

Implementation Strategy: Both DMP sub-programs will be implemented by a CSP or CSPs with demonstrated experience in DLC and Curtailment to conduct marketing, outreach, enrollment, dispatch and fulfillment while supporting EM&V. Duquesne Light's core team will support planning, contract management, marketing and outreach, as well as internal tracking and reporting.

Program Issues, Risks and Risk Management Strategy: All portfolios and programs are operated through Duquesne Light's PMRS. The system provide comprehensives oversight of program budgets and impacts and provide early warnings regarding program under- or over-subscription. CSP contract statements of work will be performance-based, include production schedules; performance payments are tied to independent measurement. Provisions in CSP contract language provides for the shifting funds between DLC and Curtailment as necessary to achieve overall goals.

Anticipated Cost to Participating Customers: The DMP brings zero incremental cost to participants since the BYOD approach to DLC leverages existing, installed devices and the Curtailment program leverages existing PJM ELRP participants.

Ramp-up Strategy: This program will launch immediately upon the commencement of Phase III with system configuration and deployment; channel partner relationship development; and customer marketing and outreach to generate substantial if not full enrollment levels of participation for the PY9 peak summer season.

Marketing Strategy: Duquesne Light will select, via competitive solicitation, implementation contractors that will utilize a number of avenues to reach the customer

facilities for each of the DLC and Curtailment sub-programs. Duquesne Light will seek an implementation CSP(s) that have demonstrated access to engagement channels such as key technology partners, equipment vendor networks, installation, and performance contracting suppliers; channel networks into vertical market segments; and direct customer engagement.

Eligible Measures and Incentives: OpenADR BYOD devices on primarily central air conditioning equipment, but with pool pumps and water heaters also eligible, are a customer-provided pre-requisite and therefore there are no "measures" for the DLC. The final program design, which implementation contract is subject to Commission approval, shall set in-place the final program terms and customer incentive amounts.

Preliminary program planning indicates participating customers will receive incentive payments, or bill credits, equivalent to $28 per summer season. The proposed Plan assumes that all direct-load control residential and/or small commercial customers are single enrollment, Act 129 programs only.

Curtailment program participants enrolled in the PJM ELRP will receive a $16-$20 incentive per kW reduced; curtailment program participants NOT enrolled in PJM capacity market programs will receive $32-$40 incentive per kW reduced. The proposed Plan assumes 75% of large C&I program participants will be dual enrolled customers, participating in both the PJM ELRP and Act 129 load curtailment programs. As reflected in the following table:

Figure 45: Curtailable Load Enrollment

Curtailable Load	Customers	Incentives	kW/Cust.	Total Incentives	Total kW
Single-Enrollment	27	$39.73	387.9	$416,096	10,474
Dual-Enrollment	81	$19.86	387.9	$624,144	31,421
Sub-Total	108			$1,040,240	41,895
Years				4	
Total				**$4,160,961**	

Maximum incentive amounts are rounded to $40 and $20 per peak kW reduced for single-enrollment and dual-enrollment customers, respectively.

Maximum Deadline for Rebates: Not applicable.

Program Start Date and Key Milestones: Refer to Section 12 Charts 1, 2 and 3 for Residential, Small C&I, and Large C&I Portfolio Programs.

Assumed EM&V Requirements to Document Savings by the Commission's Statewide EE&C Evaluator: Detailed evaluation, measurement and verification activities will be identified in the Phase III EM&V Plan.

Administrative Requirements: In addition to overarching portfolio management, organizational planning includes provision for three dedicated full-time employees to

perform management and coordination of all commercial and industrial programs (see Figure 3 or 49). Accordingly, this program is to be administrated by the three Duquesne Light employees on a shared basis with additional part-time support by engineering, marketing, purchasing, regulatory, data processing and clerical staff, as well as contracted CSP services. Program administrative costs are shown in the following Projected Program Budget table.

Estimated Participation: The primary metrics for program participation are enrollments and delivered incentive payments rendering savings estimates reflected in the Program Savings Targets table below:

Estimated Program Budget:

Figure 46: Demand Management Program Estimated Budget

Program Year		2016	2017	2018	2019	2020	Total
Incentives	DLC	$0	$182,498	$182,498	$182,498	$182,498	$729,993
	Curtailment	$0	$1,040,240	$1,040,240	$1,040,240	$1,040,240	$4,160,961
	Total	$0	$1,222,739	$1,222,739	$1,222,739	$1,222,739	$4,890,954
Admin	DLC	$146,188	$146,188	$146,188	$146,188	$146,188	$730,940
	Curtailment	$823,565	$823,565	$823,565	$823,565	$823,565	$4,117,825
	Total	$969,753	$969,753	$969,753	$969,753	$969,753	$4,848,765
DR Total		**$969,753**	**$2,192,492**	**$2,192,492**	**$2,192,492**	**$2,192,492**	**$9,739,719**

Estimated Percentage of Sector Budget: See Section 11, Table 6A for estimated percentage of sector budget.

Program Savings Targets:

Figure 47: Demand Management Program Savings Targets

Program Year		2016	2017	2018	2019	2020	Total
Estimated Peak (MW)	DLC	0	2.2	2.2	2.2	2.2	2.2
	Curtailment	0	41.9	41.9	41.9	41.9	41.9
	Total	0	44.1	44.1	44.1	44.1	44.1

Cost-Effectiveness:

- TRC – 2.1
- NTG[39] – 100.0%
- Net TRC – 2.1

  There is no NTG research available or applicable to programs newly added to the portfolio in Phase III, these programs have a NTG of 100% applied herein.

[39] ibid

4. Program Management and Implementation Strategies

(The objective of this section is to provide detailed description of how EDC plans to manage and implement programs, including their approach to and use of Conservation Service Providers (CSPs).)

4.1. Overview of EDC Management and Implementation Strategies:

4.1.1. Describe the types of services to be provided by EDC as well as consultants, trade allies, and CSPs. Indicate which organizations will provide which services and the basis for such allocation. Reference reporting and EM&V information from Sections 5 and 6 below.[40]

The delivery organization size and function is largely driven by the portfolio of programs fielded. The portfolio proposed by Duquesne Light is structured under three broad programs: residential, commercial and industrial.

The Express Efficiency, Commercial Efficiency and Industrial Efficiency Programs provide incentives for a full range of measures identified in Figure 28 to assist commercial and industrial energy customers of all sizes and in all key market segments to overcome barriers to adopt energy efficiency measures. These programs put in place a baseline program design, with set incentive levels and measure content. The design provides an overarching programmatic structure with calculated incentives for customized projects or itemized incentives for standard measures. Under this structure, each program can promote specific technologies or target specific market segments incorporating specified savings impacts and incentive levels in a consistent and common offering.

Duquesne Light implements programs effectively and economically. To achieve this, contractors known as CSPs with expertise and experience in program implementation and operations are deployed under agreements with Duquesne Light. Success depends on special services offered by CSPs to implement and overcome market segment specific barriers. Duquesne Light works together with CSPs and contractors to provide the services outlined in the table below.

[40] Services to be offered by EDC or others may include marketing, customer recruiting, demonstration projects, audits and or installation of new efficiency measures, verification of installations and or baseline usage, response to customer concerns, program tracking and program evaluation.

Figure 48: Program Implementation Responsibility

EE Sector	Program	Implementation
Residential		
	Residential Energy Efficiency Program	Core Team (or Contractor)
	REEP Whole House Audit/Retrofit	Sub-program Contractor
	Residential Appliance Recycling	Sub-program Contractor
	Residential Behavioral Savings	Sub-program Contractor
	Savings by Design (New Construction)	Core Team (or Contractor)
	Low Income Energy Efficiency	Core Team (or Contractor)
Small Commercial & Industrial Sectors		
	Express Efficiency	Core Team (or Contractor)
	Small/Medium Nonresidential Upstream Lighting	Sub-program Contractor
	Small Commercial Direct Install	Sub-program Contractor
	Multifamily Housing Retrofit	Sub-program Contractor
Large Commercial & Industrial Sectors		
	Commercial Efficiency Program	Core Team (or Contractor)
	Industrial Efficiency Program	Core Team (or Contractor)
	Large Nonresidential Upstream Lighting	Sub-program Contractor
Governmental/Nonprofit/Education Sectors		
	Public Agency Partnership Program	Core Team (or Contractor)
	Community Education	Core Team (or Contractor)

The Core Team in Figure 48 refers to implementation directly by Duquesne Light staff and supported by limited services contractors or Conservation Service Providers (CSPs) at Duquesne Light's discretion. Program implementation requires significant planning and operation management functions. In addition to initiating the contracting process, each contractor is managed and integrated into an organized and cohesive operation. Program procedural guidelines are developed and followed. Documentation is maintained and electronic data structures are developed and managed.

Customers are engaged through at least three channels. First, Duquesne Light promotes the programs to its customers, through marketing approaches such as mass media advertising, direct marketing, events, conferences, account representatives and electronic media. Second, the Duquesne Light contractors and subcontractors have similar responsibilities, with specific focus on securing commitments for customers to participate in the programs. Third, trade allies, such as builders, architects, engineers, vendors, equipment installation contractors, retailers and others, are informed of the Duquesne Light programs, with the objective of securing their willingness to participate and secure their customers and clients to participate. Trade allies are also engaged, primarily through direct marketing, events, conferences and account representatives.

The programs are designed to overcome key barriers to customer participation. In general the barriers to greater customer participation in energy efficiency are information, technical assistance, and financial assistance. The programs are also

designed to encourage comprehensiveness in terms of including multiple measures, taking account of interactive savings between measures, and advancing new designs and technologies.

Depending on the specific program in the portfolio for Duquesne Light, available services are expected to include:

- Benchmarking of energy use based on utility bills
- Walk-through energy audits to pre-screen and qualify the facility to optimize measure selection and implementation
- Investment grade energy audits for specific measures and energy savings
- Life-cycle cost-benefit analysis
- Retro-commissioning
- Project and construction planning and management
- Project documentation and operator training
- Post installation quantification of savings
- Providing guidance about alternative financing assistance
- Quantifying environmental benefits

The CSP may offer a range of services to achieve program success including:

- Marketing to prospective customers based on leads from Duquesne Light as well as resources of the CSP
- Educating customers and recruiting participants
- Conducting walk-through or preliminary energy audits
- Securing customer approval to proceed with targeted or comprehensive investment grade energy audits
- Recommending measures with estimates of energy and demand savings
- Preparing benefit and cost analyses and identification of financing options
- Completing customer applications to reserve program incentive funds and submitting to Duquesne Light for approval
- Performing or assisting customer with equipment specification, vendor selection, bidding and project management
- Conducting post-installation inspections
- Verifying savings estimates
- Coordinating applications for incentive payments
- Conducting project completion and follow-up services
- Conducting customer satisfaction surveys

Reporting is conducted based on the requirements of the regulatory authorities, Duquesne Light management and CSPs. Section 5 below presents Duquesne Light's proposed reporting criteria and supporting information systems.

EM&V is conducted for each program. The scope and level will depend on the nature of the program and split of responsibilities between regulatory authorities, Duquesne Light management and CSPs. Section 6 below presents Duquesne Light's approach to EM&V.

4.1.2. Describe how the risk categories of performance, technology, market and evaluation can affect the programs and any risk management strategies that will be employed to mitigate those risks.[41]

Performance risk refers to the ability of programs to achieve their individual goals in the context of overall corporate goals for Duquesne Light relating to energy efficiency programs. This risk will be mitigated by offering a variety of programs addressing key customer classes and market segments within the customer classes. There are programs for each customer class and subprograms for market segments within the customer class. The programs allow both itemized and customized solutions in terms of measures for commercial and industrial sectors. Comprehensive solutions are encouraged. Performance risk is further mitigated through regular reporting and timely management to identify and resolve issues through the PMRS as described in Section 5. CSP payments as well as incentive reservations and payments are facilitated through PMRS which provides for real-time management of program budgets and progress towards goals.

Technology risk refers to the possibilities that energy conservation measures will not perform as well as expected in achieving expected savings. The risk is mitigated by designing programs to foster the installation of proven technologies for the specific energy conservation measure. The program design allows for certain technologies and not others. However, advanced technologies will be encouraged where greater energy savings and cost-effectiveness are expected. The risk is further mitigated by activities in EM&V to identify and resolve technology performance concerns.

Market risk refers to the ability to recruit sufficient participants for the programs. Mitigation of market risk is pursued through efforts by Duquesne Light, CSPs, and trade allies to encourage participation by end-use customers. Where barriers to information, technical assistance and financial incentives are identified as continuing issues, adjustments to program designs have been and will continue to be considered to improve participation levels. Market risk is being mitigated during this process of planning and filing for program approval. In particular, Duquesne Light has initiated discussions with certain large customers in key market segments to encourage participation in energy efficiency projects to qualify for the proposed programs.

[41] Performance risk is the risk that, due to design or implementation flaws, the program does not deliver expected savings. Technology risk is the risk that technologies targeted by a program fail to deliver the savings expected. Market risk is the risk that customers, or other key market players (e.g., contractors), choose not to participate in a program. Evaluation risk is the risk that independent EM&V will, based on different assumptions, conclude that savings fall short of what the implementers have estimated.

Evaluation risk refers to the possibilities that energy savings results are open to question. Mitigation of this risk is achieved by an open and transparent planning process for EM&V. Programs are planned and implemented in a manner to support verification and ensure availability of required evaluation data. The plan was developed in consultation with regulatory authorities. The plan should be based on policies and procedures that are widely accepted in the discipline. The risk is mitigated further by implementation of the plan in a collaborative manner and with careful documentation of significant deviations. Finally, issues will continue to be identified and solutions proposed where evaluation risks become real.

4.1.3. Describe how EDC plans to address human resource and contractor resource constraints to ensure that adequate personnel and contractors are available to implement the EE&C plan successfully.

Human resource constraints refer to the ability of Duquesne Light to recruit and retain qualified personnel to manage and implement the proposed programs. Duquesne Light has involved individuals within the organization in the planning process for the energy efficiency program. Several programs were specifically designed to leverage the resources of external governmental agencies and community engagement channels. Currently five positions are filled and Duquesne Light is seeking to fill one open position. Duquesne Light will follow its normal recruitment process for internal and external applicants in filling the open position.

Contractor resource constraints refer to the ability of Duquesne Light to secure sufficient support from CSPs. Duquesne Light has recruited CSPs on a competitive basis by sending requests for proposals to a significant pool of potential contractors. Prior to selecting contractors and signing agreements, Duquesne Light will confirm the ability of the CSPs to fulfill their responsibilities while adhering to the Commission approved CSP contract. RFPs are sent to the CSPs currently listed on the Commission registry and this process will continue for newly approved programs.

A broader issue could be the long-term availability of qualified technicians and professionals with skills such as energy auditing, energy savings analysis, project engineering and measures installation. Duquesne Light continues to cooperate with educational institutions and training organizations to increase the supply of qualified personnel in the Pittsburgh job market. One unique strategy with long-run potential is to stimulate interest in the field for energy efficiency via programs targeted to achieving energy savings in educational facilities and in the homes of students and staff at those facilities.

4.1.4. Describe “early warning systems” that will be utilized to indicate progress towards the goals and whether they are likely to be met. Describe EDC’s approach and process for shifting goals and funds, as needed, between programs and adding new measures/programs.

Progress toward goals is reported on a regular basis rather than waiting until the end of the program cycle. The progress reporting process has been developed by Duquesne Light in consultation with regulatory authorities. Furthermore, CSPs are directly

involved through regular reporting, documentation of issues, and development of plans to resolve issues in meeting goals.

Duquesne Light implements programs in a manner to facilitate adjustments of individual programs funds and goals in order to achieve corporate goals. Each program is managed with a total budget as well as a budget for each year of implementation. This approach allows for at least an annual review and decision on the budget for the subsequent year.

As each year progresses, Duquesne Light anticipates allocating or reserving up to two-thirds of incentive payment funds for each program before committing the remaining funds for a program for that year. Funds are allocated on a project-by-project basis for large commercial and industrial customers as submitted for Duquesne Light approval. Then, when the project is completed the customer is more assured that funds to pay the incentive are available. For programs that are implemented through CSPs contract provisions, approximately 30% are held in reserve.

As further protection to help ensure funds are well managed, Duquesne Light pays for CSP performance in two steps. For applications submitted and approved by Duquesne Light, up to 30% of the pay for performance based on estimated savings is held. Applications include a signed project agreement wherein the customer commits to proceed with the installation. The remainder of the pay for performance is paid based on verified savings upon project completion and acceptance by the customer.

These plans provide flexibility to Duquesne Light to re-allocate program budgets. For example, some programs may be oversubscribed so that more funds could be added to meet customer demand for participation and shifted away from programs that are undersubscribed.

New programs may be added over time to reach underserved customers and market segments. In particular, CSPs with expertise and experience in certain market segments may be recruited to address specific opportunities.

Similarly, new technologies may be encouraged as programs are implemented. Duquesne Light is open to offering incentives for new technologies, whether as an existing program, new program or sub-program.

Finally, Duquesne Light expects to file as required with regulatory authorities when considering significant adjustments to program budgets or adding new programs and new technologies.

4.1.5. Provide implementation schedules with milestones.

See Section 12, Charts 1 through 4.

4.1.6. Provide a brief overview of how stakeholders will be engaged throughout Phase III.

During the planning process, multiple stakeholders' meetings were held to discuss Duquesne Light's program plans for Phase III. Participants included and invitations

were extended to regulatory parties such as Office of Consumer Advocate, Office of Small Business Advocate, Duquesne Industrial Intervenors, PA Commission Staff, lighting vendors, Conservation Service Providers, EM&V contractor, gas distribution companies, universal services advisory group, KEEA, Cause of PA, and the Hospital Association of Pennsylvania. As a result of those meetings and discussions, several changes were made to the Plan that is being submitted here for approval.

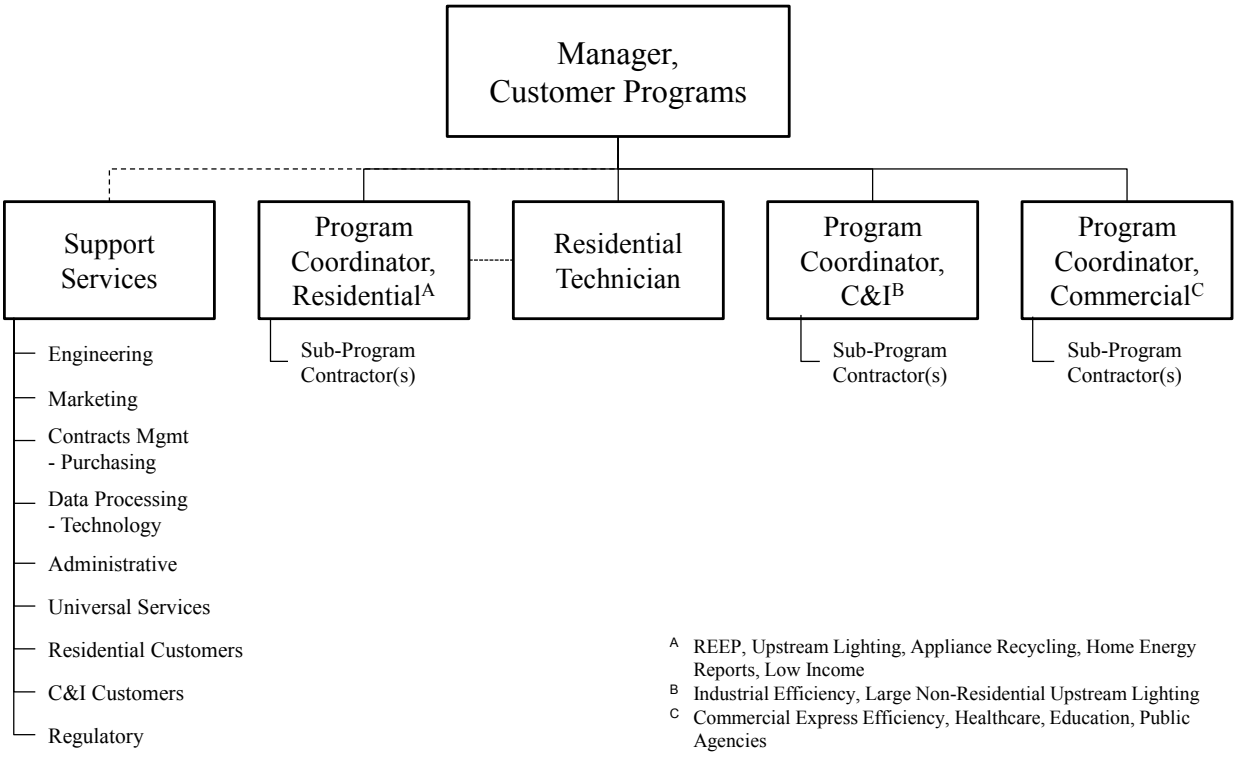
During Phase III, Duquesne Light proposed to have bi-annual meetings as well as continuing the dialogue with partnerships developed as a result of the meetings held during the course of planning the Phase III programs. For example, Duquesne Light and the gas distribution companies will continue to work together to encourage participation beyond the current Smart Comfort low income program.

4.2. Executive management structure:

4.2.1. Describe EDC structure for addressing portfolio strategy, planning, review of program metrics, internal and external communications, budgeting and financial management, program implementation, procurement, program tracking and reporting, and Quality Assurance/Quality Control (QA/QC). Include EDC organization chart for management team responsible for implementing EE&C plan.

The implementation organization for Duquesne Light is housed within the customer care function. The delivery organization size and function is driven by the portfolio of programs offered. The size and structure also reflects the use of contractors and subcontractors. The organization is headed by one manager who is responsible for the planning and implementation of the energy efficiency and conservation program. The manager is supported by several sector or segment specific program coordinators. There also is support staff for functions to include engineering, marketing, data processing, regulatory and contract management. The organizational chart pictured below represents the structure of the organization to implement the energy efficiency and conservation plan.

Figure 49: Customer Programs Organizational Chart



Each program coordinator is responsible for overall program management, including planning, reporting progress on program metrics, internal communication, external communication, budgeting and financial management. The program coordinator will call upon staff support for assistance within the energy efficiency program. Support for the programs is available for procurement and contract management, marketing, and data tracking and reporting. Additionally, quality assurance and quality control functions performed by engineering and other support staff will support the program coordinator.

CSPs are expected to provide a quality control plan. The plan provides for quality control on projects, regulatory compliance processes and performance auditing. The plan allows for Duquesne Light to access files, data and related program operating information. The plan is designed to minimize customer service issues, protect confidential information and prevent duplicate applications for incentive payments.

4.2.2. Describe approach to overseeing the performance of sub-contractors and implementers of programs and how they can be managed to achieve results, within budget, and ensure customer satisfaction.

Contractors and implementers of programs are subject to detailed planning requirements. The detailed plans include tasks, milestones, schedules, budgets, metrics of performance and personnel assignments. Regular reports on progress are required with sufficient information to allow the identification of issues and planning for improvements. Each contractor is subject to specific policies and procedures to guide their activities. Both hard copy and electronic documentation methods are required as

appropriate. Regarding customer satisfaction, contractors and implementers are expected to foster and participate in obtaining feedback from their clients; results will be provided to Duquesne Light, whether directly or through a third party.

4.2.3. Describe basis for administrative budget.

The EE&C Plan budget may be defined broadly into two components, incentive costs and all other costs excluding incentives, termed administration costs or "Admin." Admin may be broken into two parts, Program Admin and Portfolio Admin.

Program Admin: Program Admin includes those direct costs to program implementation. For programs implemented by third-party implementers (conservation service providers or CSP), Program Admin is paid under the terms of discrete implementation contracts that may include minimal start-up costs and other fees but are primarily paid based on performance $/annualized kWh savings. Program Admin performance payments are derived based on historical implementation costs and market-based responses to competitive solicitations.

Portfolio Admin: Portfolio Admin is comprised of cost to implement the EE&C Plan, generally referred to as a "Portfolio" of programs (a common industry term observed by most states). These costs are for cost elements that do not vary by program, but are common to all programs. Portfolio Admin costs include EDC labor, overarching marketing costs; tracking system, data management and communication costs; program measurement costs, quality assurance, and other implementation services such as the cost to respond to extensive and ever-present data requests by the Commission and its SWE. The basis for these costs was initially benchmarked to programs in other states, now based on historical activity within the Commonwealth. Portfolio Admin is estimated at 10.8% of the EE&C Plan budget.

4.3. Conservation Service Providers (CSPs):

4.3.1. List any selected CSPs, describe their qualifications and basis for selection (include contracts in Appendix).

Duquesne Light issued an RFP for Phase III Fulfillment Services servicing residential, commercial and industrial customers. CSPs were asked to participate in a pre-bid meeting signifying their interest, and were required to respond to the formal RFP. A team evaluated the responses and selection was made based upon the firm possessing substantial qualifications in energy efficiency as it related to the particular segment under review. Other CSPs will be selected through a similar RFP process and will fulfill all regulatory requirements associated with the start of Phase III program implementation.

4.3.2. Describe the work and measures being performed by CSPs.

Contracts for the CSPs described in Section 4.3.1. will be filed at the Commission for approval. These contracts include all the work, measures, and detailed requirements for

each of the program segments for which they were selected. One such CSP agreement is included as Section 13, CSP Binder.

4.3.3. Describe any pending RFPs to be issued for additional CSPs.

It is anticipated that CSPs may be sought for the following segments:

- Residential rebates
- Behavioral program
- Low income
- Community education energy efficiency program
- Comprehensive programs
- Commercial sector programs
- Industrial sector programs
- Demand response
- Implementation services
- EM&V

5. Reporting and Tracking Systems[42]

(Objective of this section is to provide detailed description of reporting and the critical data management and tracking systems that EDCs need in order to implement programs and which Commission, and its statewide EE&C Plan Evaluator, need to access.)

5.1. Indicate that the EDC will provide semiannual and annual reports as prescribed in the June 11, 2015 Implementation Order.

Duquesne Light's Program Management and Reporting System (PMRS) provides information reported to the Commission's appointed Act 129 EE&C Statewide Evaluator (SWE). Program activity reports are provided in form and format specified by the SWE pursuant to SWE semiannual, annual and numerous ad hoc data requests. Examples are provided below:

In Phase I and II SWE directed EDCs to provide data transfers according to "Attachment A" Monthly Data Transfer of reporting metrics for 1) Program level activity and 2) Portfolio level activity.

Figure 50: Program Level Activity

EDC Name (Select from dropdown list)
Month (Select from dropdown list)
Program Year (Select from dropdown list)
Program Name
Program Type (Select from dropdown list)
Total Number of Participants- Incremental Monthly
Total Energy Savings (MWh)- Reported Gross Incremental Monthly
Total Energy Savings (MWh)- Estimated for Projects in Progress
Total Demand Reduction (MW)- Reported Gross Incremental Monthly
Total Demand Reduction (MW)- Estimated for Projects in Progress
TRC Benefits ($)
TRC Costs ($)
Residential Total Number of Participants- Incremental Monthly
Residential Reported Energy Savings (MWh)- Incremental Monthly
Residential ReportedGross Demand Reduction (MW) - Incremental Monthly
Residential Low-Income Total Number of Participants- Incremental Monthly
Residential Low-Income Reported Energy Savings (MWh)- Incremental Monthly
Residential Low-Income Reported Gross Demand Reduction (MW) - Incremental Monthly

[42] This Section may be modified if the Commission's statewide EE&C Plan Evaluator develops further reporting and tracking systems that are approved by the Commission.

Figure 50: Program Level Activity *(continued)*

Small C&I Total Number of Participants- Incremental Monthly
Small C&I Reported Energy Savings (MWh)- Incremental Monthly
Small C&I Reported Gross Demand Reduction (MW) - Incremental Monthly
Large C&I Total Number of Participants- Incremental Monthly
Large C&I Reported Energy Savings (MWh)- Incremental Monthly
Large C&I Reported Gross Demand Reduction (MW) - Incremental Monthly
Government & Non-Profit Total Number of Participants- Incremental Monthly
Government & Non-Profit Reported Energy Savings (MWh)- Incremental Monthly
Government & Non-Profit Reported Gross Demand Reduction (MW) - Incremental Monthly
EDC Incentives to Participants ($)- Incremental Monthly
EDC Incentives to Trade Allies ($)- Incremental Monthly
Participant Costs ($) - Incremental Monthly

Figure 51: Portfolio Level Activity

EDC Name (Select from dropdown list)
Month (Select from dropdown list)
Program Year (Select from dropdown list)
Portfolio Impacts
Total Energy Savings (MWh)- Reported Gross Incremental Monthly
Total Energy Savings (MWh)- Estimated for Projects in Progress
Total Demand Reduction (MW)- Reported Gross Incremental Monthly
Total Demand Reduction (MW)- Estimated for Projects in Progress
TRC Benefits ($) - Reported Gross Incremental Monthly
TRC Benefits ($) - Estimated for Projects in Progress
TRC Costs ($) - Reported Gross Incremental Monthly
TRC Costs ($) - Estimated for Projects in Progress
Summary of Finances
EDC Incentives to Participants ($)- Incremental Monthly
EDC Incentives to Trade Allies ($)- Incremental Monthly

5.2. Project Management Tracking Systems:

5.2.1. Provide brief overview of the data tracking system for managing and reporting measure, project, program and portfolio activities, status and performance as well as EDC and CSP performance and expenditures.

Duquesne Light has designed and developed a PMRS for tracking, managing and reporting measure, project, program and portfolio activities. The PMRS supports and

facilitates program operation, management and reporting for use by program managers and sub-segment program managers. PMRS serves three primary purposes:

1) Enable CSPs and internal management to create and/or upload program activities
2) Provide the capability to review and approve activities
3) Provide comprehensive reporting to support Duquesne Light's internal and Commission reporting requirements, described above.

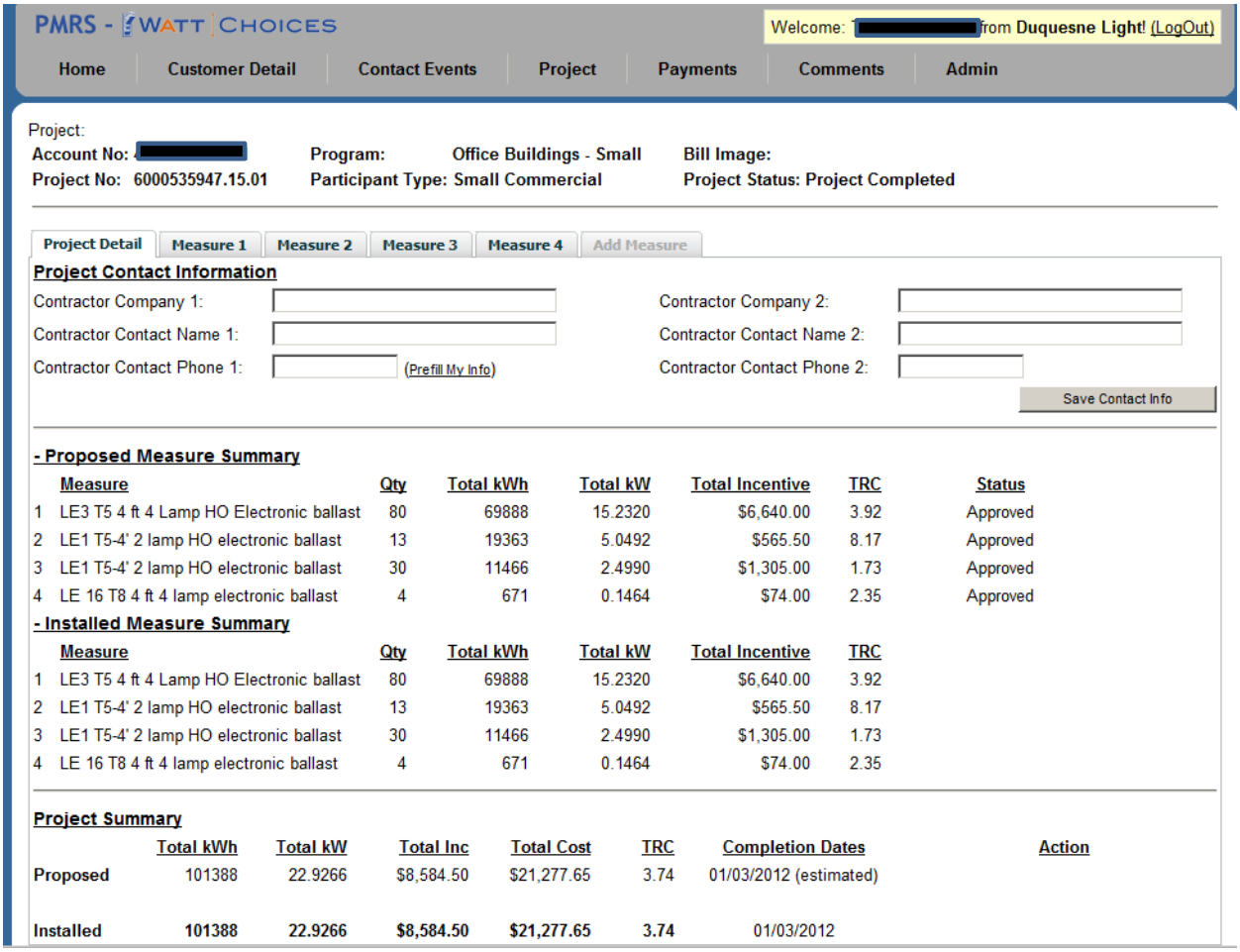
5.2.2. Describe the software format, data exchange format, and database structure you will use for tracking participant and savings data. Provide examples of data fields captured.

PMRS is a system using a web front-end which stores data in the back-end via a relational MS SQL Server database engine. Duquesne Light customer information is captured via SOA web service calls to Duquesne Light's implementation of Oracle CCB. Once a customer's data is captured in PMRS the data is managed with the system. The database is populated by uploading the measures and financial flat files from SSPMs/CSPs. The measures and financial flat files are comma separated values ("CSV") files. The PMRS reads and extracts the data from these files and stores the values in the PMRS database. The PMRS uses a reporting engine (Crystal Reports) to produce reports from the database. Reports and supporting data for Commission review and audit are provided in hard copy as well as published for download in a secured area on the Duquesne Light website.

5.2.3. Describe access and mechanism for access for Commission and statewide EE&C Plan Evaluator.

SWE members have the opportunity for real-time on-line access to Duquesne Light's PMRS where they can view projects from initiation through completion. Data elements which are tracked in PMRS address customer data, customer contact data, project and measure data; as well as financial rebate, CSP performance payment data, and measure/project (TRC) cost effectiveness screening. The following illustrative are two "screenshots" of an actual project viewed from inside PMRS and are provided as an example of online project access:

Figure 52: PMRS Screenshot - Project level View



PMRS - WATT CHOICES

Welcome: [redacted] from Duquesne Light! (LogOut)

Home | Customer Detail | Contact Events | Project | Payments | Comments | Admin

Project:
Account No: [redacted] Program: Office Buildings - Small Bill Image:
Project No: 6000535947.15.01 Participant Type: Small Commercial Project Status: Project Completed

Project Detail | Measure 1 | Measure 2 | Measure 3 | Measure 4 | Add Measure

Project Contact Information

Contractor Company 1: Contractor Company 2:
Contractor Contact Name 1: Contractor Contact Name 2:
Contractor Contact Phone 1: (Prefill My Info) Contractor Contact Phone 2:
Save Contact Info

- Proposed Measure Summary

	Measure	Qty	Total kWh	Total kW	Total Incentive	TRC	Status
1	LE3 T5 4 ft 4 Lamp HO Electronic ballast	80	69888	15.2320	$6,640.00	3.92	Approved
2	LE1 T5-4' 2 lamp HO electronic ballast	13	19363	5.0492	$565.50	8.17	Approved
3	LE1 T5-4' 2 lamp HO electronic ballast	30	11466	2.4990	$1,305.00	1.73	Approved
4	LE 16 T8 4 ft 4 lamp electronic ballast	4	671	0.1464	$74.00	2.35	Approved

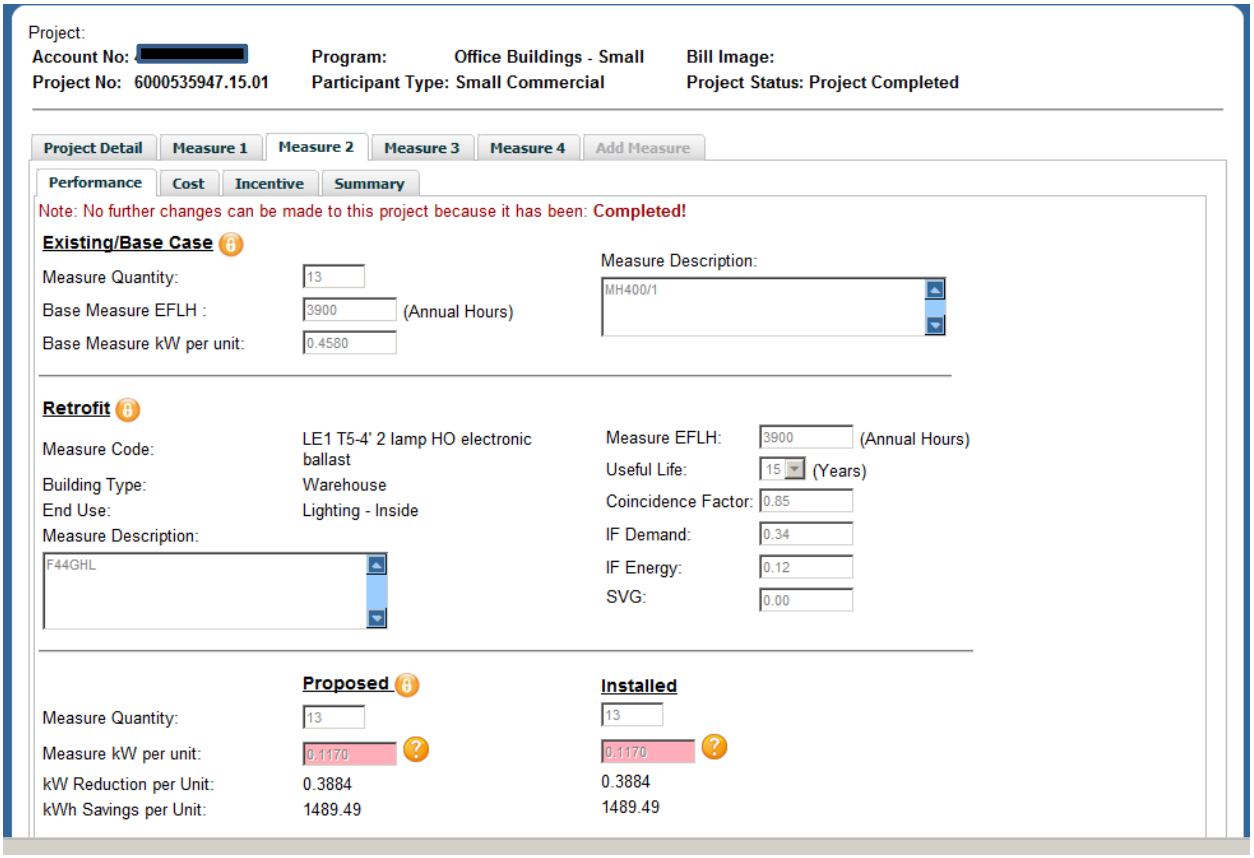
- Installed Measure Summary

	Measure	Qty	Total kWh	Total kW	Total Incentive	TRC
1	LE3 T5 4 ft 4 Lamp HO Electronic ballast	80	69888	15.2320	$6,640.00	3.92
2	LE1 T5-4' 2 lamp HO electronic ballast	13	19363	5.0492	$565.50	8.17
3	LE1 T5-4' 2 lamp HO electronic ballast	30	11466	2.4990	$1,305.00	1.73
4	LE 16 T8 4 ft 4 lamp electronic ballast	4	671	0.1464	$74.00	2.35

Project Summary

	Total kWh	Total kW	Total Inc	Total Cost	TRC	Completion Dates	Action
Proposed	101388	22.9266	$8,584.50	$21,277.65	3.74	01/03/2012 (estimated)	
Installed	**101388**	**22.9266**	**$8,584.50**	**$21,277.65**	**3.74**	01/03/2012	

Figure 53: PMRS Screenshot – Measure Level View



6. Quality Assurance and Evaluation, Measurement and Verification

(Objective of this section is to provide detailed description of how the EDC's quality assurance/quality control, verification and internal evaluation process will be conducted and how this will integrate with the statewide evaluation activities)

6.1. Quality Assurance/Quality Control:

6.1.1. Describe overall approach to quality assurance and quality control.(QA/QC)

EE&C program QA/QC is incorporated into program planning and implementation as described below:

Program Planning: Program target markets and measure content are based on an energy efficiency potential forecast that is a systematic and comprehensive inventory of regional efficiency gain opportunities. Program approaches to deliver identified energy efficiency services are developed using benchmarked program approaches and best practices, tailored to Duquesne Light regional needs and opportunities.

Program Implementation: All CSPs under contract to implement Duquesne Light energy efficiency programs are required by contract statements of work to provide a Program Management Plan ("PMP"). The PMP presents the program rationale, assumptions, approach, processes, and other key material in an integrated form. The PMP addresses the following key sections:

- Program overview and assumptions
- Program policies and procedures
- Production plan
- Marketing plan
- Technical specifications
- Performance metrics and reporting
- Quality assurance plan
- Data management plan
- Invoice and measure reporting tools
- Appendices:
  - Program forms
  - Marketing materials
  - Subcontractor contracts

6.1.2. Describe procedures for measure and project installation verification, quality assurance and control, and savings documentation.

Procedures for Project Review, Approval and Processing

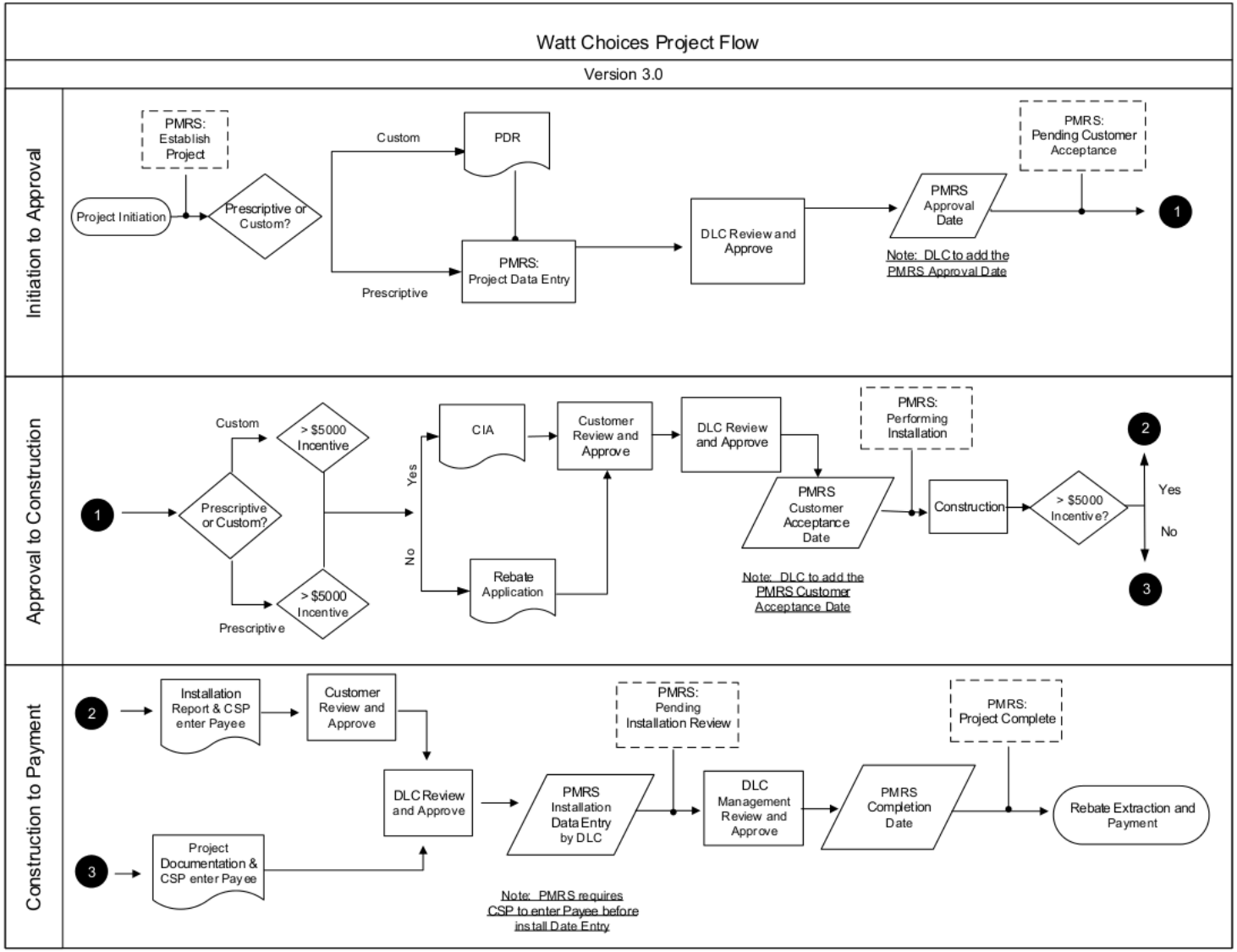
Procedures are in place to ensure prospective projects receive appropriate and consistent review prior to approval and incentive payment processing.

Residential incentive application processing is accomplished via fulfillment services provided by a fulfillment contractor. This is comprised of verification to ensure the customer is a Duquesne Light customer, the product information is correct, and the product is eligible under the program to receive incentives, and; invoices corroborate product identification and are dated within the eligible program period.

Commercial and industrial (C&I) project and customer incentive processing varies depending upon the type and size of the project. Project development, review and approval processes are show below in the project review flow chart built upon the following three project phases:

- Initiation to Approval: Projects are established in the Program Management and Reporting System (PMRS). If the prospective project is a custom measure project, a Project Description Report (PDR) is required. Duquesne Light performs electronic as well as hardcopy review of submitted projects. If the project is approved for advancing Duquesne Light approves the project in PMRS and the project is advance to the participating customer for acceptance.
- Approval to Construction: Depending upon project type (prescriptive or custom) and amount of the incentive payment a Customer Incentive Agreement (CIA) or Rebate Application is required. A CIA or Rebate Application is presented to the customer for approval. Duquesne Light reviews and confirms customer acceptance and enters the Customer Acceptance Date into PMRS. The project is advanced in PMRS to "Performing Installation."
- Construction to Payment: If the incentive amount is greater than $5000 an installation report, customer review and approval is required; otherwise, project documentation is advanced to Duquesne Light and payee information is populated in PMRS. Duquesne Light reviews for approval submitted Installation Reports and other project documentation. Pending successful management review, the completion date is entered into PMRS and the customer incentive payment is prepared.

Figure 54: Watt Choices Project Review Process



Duquesne Light reviews project file content for completeness and accuracy. If the project is comprised of prescriptive measures, savings calculations are verified to be consistent with current PA TRM requirements. If the project is comprised of custom measures the project file is reviewed to ensure a measurement and verification plan has been developed and followed through project prosecution, and; the project file contains all applicable engineering reports, measurement and cost documentation. The following is a working document used is reviewing project file content:

Figure 55: Project File Review List

PROJECT FILE REVIEW LIST

Implementation Contractor: **Project No:**

One of the following are required from each section below (varies by implementer and project scope):

Customer Enrollment

- Rebate Application ☐
- Customer Incentive Agreement ☐
- Customer Signed Project Package ☐
- Memorandum of Understanding ☐

Project Definition

- Project Description ☐
- Electric bills/Audit Report/Studies ☐
- Equipment Inventory (baseline) ☐
- Equipment Inventory (retrofit) ☐
- Savings calculations (Appendix C or Appendix D) ☐
- Cost Estimates ☐
- TRC Screening ☐

Installation Report

- Site inspection documentation (reports/pictures) ☐
- Cost documentation (invoices/purchase orders/supplier quotations) ☐
- Specification sheets ☐
- Other (Vendor provided installation verification) ☐

Measurement & Verification

- PA TRM Algorithms & Inputs ☐
- Pre- and Post-measurement ☐
- Calibrated Simulation ☐

Memorandum & Correspondence ☐

NOTES: _____

Evaluation Measurement and Verification: Projects and measure reported savings are verified pursuant to the Duquesne Light Evaluation Measurement and Verification (EM&V) Plan. The EM&V Plan ensures customer projects are verified according to a consistent and systematic process that is consistent with the Statewide Evaluator's (SWE) Audit Plan and Evaluator's Framework for Pennsylvania Act 129 Energy Efficiency and Conservation Programs (Audit Plan). The Duquesne Light EM&V Plan specifies sample plans as well as applicable verification rigor consistent with the Audit Plan and is vetted with and, approved by the SWE.

6.1.3. Describe process for collecting and addressing participating customer, contractor and trade ally feedback (e.g., suggestions and complaints).

All Conservation Service Providers (CSP) under contract to implement Duquesne Light energy efficiency programs are required by contract statements of work to perform customer feedback surveys. The CSP contracts have been submitted to, and approved by the Commission. For contractor implemented programs, customers are provided Duquesne Light direct contact information along with an open solicitation for feedback and comments.

Trade associations were specifically invited to Duquesne Light's Act 129 stakeholder meetings. Additionally trade association engagement and leveraging is a priority element utilized by Duquesne Light for ranking CSP proposals to provide EE&C services to specific market segments. Active and direct engagement of customers, contractors and trade associations has and will continue to characterize Duquesne Light's EE&C program planning and implementation.

6.2. Describe any planned market and process evaluations and how results will be used to improve programs.

Process evaluation methods, research objectives, timing and frequency, quality control and evaluation components are provided under Section 3 of Duquesne Light's SWE approved EM&V Plan. The primary research issues center around assessing program design and operation. Specific researchable issues are briefly listed below:

- Document and review program operations (e.g. Program Management Plans) to provide baseline description of program operations and management to compare design and operational practices with the program theory.
- Design and utilize interview and survey techniques to describe and assess program operations, which can be compared to original design intent, and to measure participant satisfaction and program performance, which can be analyzed to identify gaps between program goals and results.
- Identify and recommend changes in a program's operational procedures or systems that can be expected to improve the program's efficiency or cost-effectiveness

Process evaluation content is incorporated into impact evaluation research activities; therefore it is conducted in the same frequency and timing as impact evaluation activities. The results of process evaluations are communicated with program planning and implementation team members on a semiannual basis.

6.3. Describe strategy for coordinating with the statewide EE&C Plan Evaluator (nature and type of data will be provided in a separate Commission Order).

Continuation of Phase III monthly SWE conference calls, participation in scheduled Program Evaluation Group meetings, response to data requests and providing SWE pre-defined semiannual and annual program reporting.

7. Cost-Recovery Mechanism

(Objective of this section is to provide detailed description and estimated values for cost recovery mechanism.)

7.1. Provide the amount of total annual revenues as of December 31, 2006, and provide a calculation of the total allowable EE&C costs based on 2% of that annual revenue amount.[43]

Figure 56: Total Revenues

	2006 Total	2% of Total
DLC Revenue	$723,299,451	$14,465,989
EGS G&T	$253,998,128	$5,079,963
Act 129 Annual Budget		$19,545,952

7.2. Description of plan in accordance with 66 Pa. C.S. §§ 1307 and 2806.1 to fund the energy efficiency and conservation measures, to include administrative costs.

The Act allows all EDCs to recover on a full and current basis from customers, through a reconcilable adjustment clause under 66 Pa. C.S. § 1307, all reasonable and prudent costs incurred in the provision or management of its plan. The Act also requires that each EDC's plan include a proposed cost-recovery tariff mechanism, in accordance with 66 Pa. C.S. § 1307 to fund all measures and to ensure full and current recovery of prudent and reasonable costs, including administrative costs, as approved by the Commission. To that end, Duquesne Light has designed a surcharge and reconciliation mechanism for all customer segments. The surcharge has been designed in a manner that recovers costs of the programs from the customers who have an opportunity to participate in and receive the benefits of those programs.

7.3. Provide data tables (see Tables 6A, 6B and 6C).

See Section 11 for Tables 6A, 6B, and 6C, which are populated with all the appropriate data required by the PA PUC.

7.4. Provide and describe tariffs and a Section 1307 cost recovery mechanism, pursuant to the requirements of the June 11, 2015 Implementation Order at 149, that will be specific to Phase III Program costs. Provide all calculations and supporting cost documentation.

In compliance with the Phase III Implementation Order, the Company will combine the Phase II and Phase III surcharges into a single surcharge and tariff. Order page 149.

[43] See also Commissioner Pizzingrilli's January 15, 2009 Motion at Docket no. M-2008-2069887, allowing Duquesne Light to include the EGS G & T.

The Company proposes to revise the Phase II Rider No. 15a, "Energy Efficiency and Conservation," to its tariff. The tariff sets forth the monthly surcharge rates by customer class to recover the program budgets. Since the proposed cost recovery method is different for residential, small and medium C&I and large C&I customer classes, a formula and description of the formula is defined for each customer class surcharge. Five surcharges are defined to recover costs as reasonably close as possible for each customer class and segment within the class, i.e. commercial or industrial customers. The formulas are in accordance with the provisions of a Section 1307 cost recovery surcharge and include reconciliation of over or under collections and interest on the over or under recovery. Duquesne will not impose any interest on over or under collections, per the Commission's Phase III Implementation Order at 149.

7.5. Describe how the cost recovery mechanism will ensure that measures approved are financed by the same customer class that will receive the direct energy and conservation benefits.

The Company proposes to implement five surcharges to recover costs as close as reasonably possible to the customer class receiving the benefit. The costs are first defined for the three specific customer classes – residential, commercial and industrial. Commercial and Industrial ("C&I") customers were separated into small and medium C&I and large C&I customer segments because of the diversity in the size of C&I customers in the Company's service territory to allow for more reasonable cost recovery. Small and medium C&I customers are those customers with monthly metered billing demand 300 kW and less. Large C&I customers are those customers with monthly billing metered demand greater than 300 kW. This segmentation of customers is appropriate because it aligns programs and program costs with the current tariff and with the tariff charges for distribution, transmission and default service supply. C&I program costs were then assigned for recovery first based on program description (e.g. Office Buildings – Large). Duquesne adopted the use of the Peak Load Contribution demand measure in the application of its cost recovery mechanism for Large C&I customers. The tariff modification for the Phase I Plan was filed with the Commission on November 9, 2009 and was approved by a Secretarial Letter issued on November 24, 2009, at Docket No. M-2009-2093217. The Commission proposed a modification to the Large Commercial Surcharge and the Large Industrial Surcharge in an Opinion and Order dated February 2, 2010, at Docket No. M-2009-2093217. As a result of this modification, Duquesne Light implemented the rate design using a fixed customer charge to recover the administrative costs and a demand charge, using Peak Load Contribution, to recover the incentive costs for Large Commercial and Large Industrial customers. Duquesne filed a revised tariff supplement on February 22, 2010. The fixed customer charge component of the surcharge and the demand charge component of the surcharge are set forth as two separate line item charges on the customer bill. Duquesne Light used this same surcharge structure in Phase II and will continue this same surcharge structure in Phase III.

7.6. Describe how Phase III costs will be accounted for separate from costs incurred in prior phases.

Phase I Plan costs were recovered and reconciled in December 2014 at which time the Phase I surcharge in Rider No. 15 of the tariff was set to zero. The Phase II Plan will end May 31, 2016. The Company will transition from the Phase II cost recovery methodology to the Phase III cost recovery methodology in compliance with the Phase III Implementation Order (Order page 149). By April 30, 2016, The Company will submit a 1307e reconciliation of actual Phase II expenses incurred with actual Phase II surcharge revenue received for the 10 months ending March 31, 2016. The net over- or under-recovered amount shall be reflected as a separate line item, without interest, as an E-factor adjustment of the EEC Phase III rates effective June 1, 2016. In addition, as a separate line item, the Phase III rates effective June 1, 2016, shall include projections of the: expenses to finalize any Phase II measures installed and commercially operable on or before May 31, 2016; expenses to finalize any contracts; and other Phase II administrative obligations. The reconciliation of actual Phase II expenses with actual EEC Phase II surcharge revenue for April and May 2016 shall reconciled with EEC Phase III revenue and expense for the 12 months ending March 31, 2017. Thereafter, the Company will reconcile actual Phase III expenses incurred with actual Phase III surcharge revenue received for the 12 months ending March 31 of each year for the term of the Phase III Plan.

All costs associated with the Phase III Plan will be identified and tracked in PMRS. On or about May 1 of each year, the Company will file with the Commission its proposed Phase III surcharge rates effective June 1 of that year. The proposed Phase III surcharge rates will be designed to recover the projected program costs for upcoming Plan year and include a provision for the net over- or under- collection for the previous Plan year.

8. Cost Effectiveness

(Objective of this section is to provide detailed description of the cost-effectiveness criteria and analyses. It can refer to appendices with program data.)

8.1. Explain and demonstrate how the proposed plan will be cost effective as defined by the Total Resource Cost Test (TRC) specified by the Commission.[44]

Avoided electric energy and capacity costs are used for the purposes of determining the Phase III EE&C Plan cost-effectiveness and are developed in compliance with the Commission's 2016 TRC Order[45]. Duquesne Light developed the data inputs to support the avoided costs analysis. The following methodology was used to calculate energy and capacity price inputs to determine avoided costs:

Energy Prices: Forecast energy prices are provided for 15 years, in three five year periods consistent with the applicable TRC orders. Energy prices for each of the calendar years 2016-2020 were calculated using futures prices quoted by the New York Mercantile Exchange ("NYMEX").[46] PJM Western Hub energy futures prices, both on-peak and off-peak, were used to calculate energy prices. There are no traded futures contracts for the Duquesne Light Locational Marginal Pricing (LMP) zone, costs are based on PJM Western Hub futures prices because it is reasonably proximate to Duquesne Light's service territory. Prices are separated into Summer and Winter months and an average was calculated for the planning year (July – June, futures contract periods).

For calendar years 2021-2025, natural gas futures prices were used by applying the heat rate of the nth combustion turbine (CT) for on peak and combined-cycle combustion turbine (CC) for off peak as defined in the 2015 EIA Annual Energy Outlook (AEO). Gas prices were based on Henry Hub futures prices from CME Group based on 9/18 closing. Basis differentials were added to the gas price based on the average Tetco-M31 basis swap to Henry Hub futures. Variable O&M (VOM) was added to the calculated values for on or off peak based on the nth CT or CC. Heat rates and VOM were from the supporting assumptions for the 2015 EIA AEO. VOM is reported in 2013 dollars and was escalated using the BLS 5 year average producer price index changes calculated from 2009-2014. Prices are separated into Summer and Winter months and an average was calculated for the planning year (July – June, futures contract periods).

Energy prices for calendar years 2026-2030 utilized EIA's Annual Energy Outlook 2015 forecast price for generation for the MAAC region.[47]

Capacity Prices: Capacity (generation) prices are based on the PJM Reliability Pricing Model (RPM) Base Residual Auction results for the Duquesne Light Zone for planning periods 2018/2019 the last year available. The last planning period result was escalated through 2035 using Producer Price Index Industry Data for electric power generation,

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[44] *See 2016 Total Resource Cost (TRC) Test* Order, at Docket No. M-2015-2468992, (June 11, 2015 TRC Test Order) entered June 22, 2015.
[45] PA PUC 2016 Total Resource Cost Test Order, June 11, 2015, at Docket No. M-2015-2468992
[46] CME NYMEX Data http://www.cmegroup.com/trading/energy/electricity/pjm-western-hub-off-peak-calendar-month-real-time-lmp-swap-futures_quotes_settlements_futures.html
[47] Source: EIA AEO 2015 Support Table 83 Row 134

transmission, and distribution. Capacity (T&D) prices are based on the findings of the SWE 2015 DR Potential Study published in Table 1-3, escalated using the aforementioned producer price index, consistent with the Commission's 2016 TRC Order.[48]

Figure 57: Duquesne Light Act 129 EE&C Plan Phase III Avoided Costs

	Energy $/kWh				T&D	Capacity
	S-On-Pk	S-Off-Pk	W-On-Pk	W-Off-Pk	$/kW-year	$/kW-year
2017	$ 0.0496	$ 0.0313	$ 0.0543	$ 0.0409	$ 42.679	$ 21.947
2018	$ 0.0476	$ 0.0308	$ 0.0512	$ 0.0394	$ 43.607	$ 44.015
2019	$ 0.0462	$ 0.0309	$ 0.0496	$ 0.0373	$ 44.556	$ 59.292
2020	$ 0.0462	$ 0.0310	$ 0.0486	$ 0.0316	$ 45.526	$ 60.582
2021	$ 0.0611	$ 0.0309	$ 0.0639	$ 0.0327	$ 46.517	$ 61.901
2022	$ 0.0635	$ 0.0323	$ 0.0665	$ 0.0342	$ 47.529	$ 63.248
2023	$ 0.0658	$ 0.0336	$ 0.0689	$ 0.0356	$ 48.563	$ 64.624
2024	$ 0.0682	$ 0.0349	$ 0.0714	$ 0.0370	$ 49.620	$ 66.031
2025	$ 0.0704	$ 0.0362	$ 0.0738	$ 0.0384	$ 50.700	$ 67.467
2026	$ 0.0726	$ 0.0374	$ 0.0766	$ 0.0400	$ 51.803	$ 68.936
2027	$ 0.0989	$ 0.0542	$ 0.0989	$ 0.0542	$ 52.930	$ 70.436
2028	$ 0.0970	$ 0.0527	$ 0.0970	$ 0.0527	$ 54.082	$ 71.969
2029	$ 0.0953	$ 0.0514	$ 0.0953	$ 0.0514	$ 55.259	$ 73.535
2030	$ 0.0940	$ 0.0503	$ 0.0940	$ 0.0503	$ 56.462	$ 75.135
2031	$ 0.0939	$ 0.0500	$ 0.0939	$ 0.0500	$ 57.690	$ 76.770
2032	$ 0.1015	$ 0.0547	$ 0.1015	$ 0.0547	$ 58.946	$ 78.441
2033	$ 0.1100	$ 0.0600	$ 0.1100	$ 0.0600	$ 60.229	$ 80.148
2034	$ 0.1123	$ 0.0613	$ 0.1123	$ 0.0613	$ 61.539	$ 81.892
2035	$ 0.1147	$ 0.0625	$ 0.1147	$ 0.0625	$ 62.878	$ 83.674

Avoided costs are applied at the measure level and are based upon individual measure estimated useful life (EUL) and energy savings time-of-use and seasonal profiles. Measure EULs are taken from the 2016 TRM. Measure energy savings profiles were taken from the 2016 TRM, when available; referenced to other industry sources, or developed from annual hourly savings profiles aggregated into time-of-use periods annunciated in 2016 TRM table 1-1. Life-cycle measure avoided cost "streams" are brought to present value by applying a 6.9% discount rate and are the basis of program benefits quantified in this Plan.

Assessment of measure, project, program and ultimately portfolio cost-effectiveness requires development of both benefits (described above) and costs. The Total Resource Cost (TRC) test used to determine cost-effectiveness incorporates utility program implementation or administration costs, as well as measure costs. Projected administration costs are provided in Tables 1, 6A, 6B, and, 6C; measure costs are included in TRC summarized in Tables 7A through 7E. Consistent with the TRC Order, measure costs are either referenced to the California Database of Energy Efficient

[48] Ibid

Resources (DEER), the SWE incremental cost database, or identified measure cost studies.[49] These costs are reported on an annual basis in compliance with SWE prescribed EDC annual reporting requirements.

8.2. Provide data tables (see Tables 7A through 7E).

See Tables 7A, 7B, 7C, 7D and 7E, which are populated with all the appropriate data required by the PA PUC. In addition, see Tables 8A, 8B, 8C, 8D, and 8E.

[49] Ibid.

9. Plan Compliance Information and Other Key Issues

(Objective of this section is to have specific areas in EE&C plan where the Commission can review miscellaneous compliance items required in legislation and address key issues in EE&C plan, portfolio, and program design.)

9.1. Plan Compliance Issues.[50]

9.1.1. Describe how the plan provides a variety of energy efficiency and conservation measures and will provide the measures equitably to all classes of customers in accordance with the June 11, 2015 Implementation Order.

The initial measure mix was established based on exhaustive benchmarking of customer populations and building stocks. Phase III Plan measures (Figures 13 and 28) were selected based on the Phase II PY 5-6 program participation, treated as a demonstrated record of participant interest, willingness to adopt and need. Next, Plan measure content was reconciled with content of the 2016 Technical Reference Manual (TRM) and information provided in the SWE saturation studies and potential forecast.[51]

PY 5-6 program performance as well as customer participant feedback supported retention of many Phase I and Phase II programs. Residential sector programs retain the successful downstream and upstream rebate offerings, but are expanded to include a new Savings by Design (new construction) program. The Commercial and Industrial portfolios retain proven customer market segment engagement channels. The Small Commercial Direct-Install Program and Multifamily Housing Retrofit Program were both successful in Phase II and are continued in Phase III. Such programs demonstrate Duquesne Light's commitment to providing comprehensive measures to under-served market segments. The Phase III EE&C Plan also places an emphasis on expanded and aggressive governmental/educational/non-profit programs through Duquesne Light's Public Agency Partnership Program.

Program goal allocation and associated program budgets were adjusted to accommodate the Commission's Implementation Order and Clarification Order, which required segment carve-outs for the low income and governmental/educational/non-profit segments and specified program comprehensiveness requirements.[52] Goal allocation for the remaining customer segments was based on segment energy use, previous delivery channel strengths and weaknesses, as well as requirements to achieve mandated reductions at authorized budgets.

9.1.2. Provide statement delineating the manner in which the EE&C plan will achieve the requirements of the program under 66 Pa. C.S. §§ 2806.1(c) & (d).

The following table shows the projected cumulative portfolio and program reductions in consumption (energy) and peak period demand reduction estimated for the program year ending May 31, 2021:

[50] These sub-sections may reference other chapters of the plan as they may restate what was included elsewhere in the plan, and are collected here only for convenience of review.
[51] Ibid
[52] Ibid.

Figure 58: Cumulative Portfolio and Program Reductions in Consumption

Energy and Demand Savings—May 31, 2021

Sector	Program Name	Energy Savings (kWh)	Demand Savings (kW)
Residential			
	Residential Energy Efficiency Program	85,894,931	9,267
	REEP Whole House Audit/Retrofit	1,750,916	950
	Residential Appliance Recycling	8,815,961	987
	Residential Behavioral Savings	24,146,105	0
	Savings by Design (New Construction)	409,000	59
	Low Income Energy Efficiency	16,550,885	353
	Subtotal	137,567,798	11,616
Small Commercial & Industrial Sectors			
	Express Efficiency	35,147,555	6,566
	Small/Medium Nonresidential Upstream Lighting	19,464,329	5,850
	Small Commercial Direct Install	10,934,231	1,282
	Multifamily Housing Retrofit	8,912,014	551
	Subtotal	74,458,130	14,250
Large Commercial & Industrial Sectors			
	Commercial Efficiency Program	50,575,285	5,660
	Industrial Efficiency Program	46,966,828	14,115
	Large Nonresidential Upstream Lighting	84,021,466	9,403
	Subtotal	181,563,579	29,178
Governmental/Nonprofit/Education Sectors			
	Public Agency Partnership Program	46,772,369	5,234
	Community Education	9,372,444	162
	Subtotal	56,144,813	5,396
Total EE&C Plan Savings		449,734,320	60,439
Mandated Energy Savings		440,916,000	N/A
Demand Response Programs			
	Direct Load Control Program	N/A	2,205
	Large Curtailable Load Program	N/A	41,895
	Total DR Impacts	N/A	44,100
Mandated Demand Response Program Demand Reduction			42,000

9.1.3. Provide statement delineating the manner in which the EE&C plan will achieve the Low-Income requirements prescribed in the June 11, 2015 Implementation Order.

Consistent with Act 129 and the Commission's Implementation Order and Clarification Order, Duquesne Light's Phase III EE&C Plan contains two provisions to provide EE&C Plan services to households at or below 150% of the federal poverty income guidelines. These provisions are: 1) to obtain a minimum of five and-one-half percent (5.5%) of the total EE&C Plan consumption reduction requirements, and 2) the 5.5% low income mandate must be achieved by programs that ONLY serve low income populations. The EE&C Plan is constructed to comply with the Commission's requirements to omit programs capable of serving both income qualifying and non-income qualifying participants. As shown in Figure 59, Duquesne Light's Phase III EE&C Plan projects low income segment savings at 25,462,899 kWh, 5% above the required 5.5% savings requirement of 24,250,380 kWh.

Figure 59: LIEEP Projected Energy Savings

	May 31, 2021 kWh
Mandated Reductions	440,916,000
Low Income Requirement	24,250,380
Percentage	5.5%
EE&C Plan Target	
Low Income Home Energy Reports	12,731,450
Low Income Whole House	3,819,435
Low Income Multifamily	8,912,014
Total Low Income	25,462,899

9.1.4. Provide statement delineating the manner in which the EE&C plan will achieve the Governmental/Educational/Non-profit requirements prescribed in the June 11, 2015 Implementation Order.

Act 129 requires governmental/educational/non-profit program energy savings to be a minimum of 3.5% of the required reduction in consumption. As shown in the summary table in Section 9.1.2 and the table below, Public Agency Partnership program projected energy reduction exceeds the mandated amounts.

Figure 60: Governmental/Educational/Non-profit Sector Savings

	May 31, 2021 kWh
Mandated Reductions	440,916,000
GNI Requirement	15,432,060
Percentage	3.5%
EE&C Plan Target	
Public Agency Partnership	46,772,369
Community Education	9,372,444
Total GNI	56,144,813

9.1.5. Describe how EDC will ensure that no more than two percent of funds available to implement the plan shall be allocated for experimental equipment or devices.

Funds to reach the goals associated with the Act are limited, such that experimental equipment or devices have not been planned in the program designs. In the event that customized projects within the proposed portfolio of programs are developed for customers that include such equipment or devices, funding will be tracked to ensure that no more than two percent of funds are available for such equipment. Experimental equipment or devices were not an issue in Phase I or Phase II.

9.1.6. Describe how the plan will be competitively neutral to all distribution customers even if they are receiving supply from an EGS.

The General Assembly intended Act 129 to be competitively neutral, and not disadvantage EDCs that had active retail electric markets. The Commission also notes that, in ascertaining legislative intent, the Commission is to presume that the General Assembly did not intend a result that was impossible to execute, unreasonable or unconstitutional.

Duquesne Light program designs for the customer segments, the implementation plans and tracking mechanisms have been developed regardless of the generation supply for the individual customers. The Plan does not discriminate on the basis of generation supply nor does it provide additional opportunities based on the specifics of a customer's generation supply.

9.2. Other Key Issues:

9.2.1. Describe how this EE&C plan will lead to long-term, sustainable energy efficiency savings in the EDC's service territory and in Pennsylvania.

Previous sections of this plan describe in detail the specific manner in which the program is designed to address specific consumption profiles and respond to diverse customer needs. Since the early 1970s, utility-sponsored energy efficiency programs

have developed and refined a series of approaches to effectively reduce energy consumption in the residential, commercial and industrial sectors. Critical elements to program success have been identified, tested, and replicated by utilities nationwide. All of the measures that make up the EE&C plan for Duquesne Light will draw upon the lessons learned in these other initiatives and will focus on reducing kWh and kW savings within each specific customer sector.

Duquesne Light believes that all residential approaches (mass market/rebates, new construction, home energy reports and whole home performance/retrofits) are appropriately focused on achieving long-term, sustainable energy efficiency savings. Likewise, programs focused on producing kWh and kW savings in the commercial sector will primarily achieve reductions through rebates and loans, education and upstream partnerships, and direct installation of measures in customer facilities. Programs serving the industrial sector will focus on producing kWh and kW savings through rebates and loans through incentives and upstream partnerships. Because the funding levels for each specific measure are evaluated on the level of savings that can be reasonably achieved over the useful life of the measure, the applicable screening methods strongly favor funding measures that provide longer-term savings.

The Plan will facilitate the selection and installation of energy efficient equipment, foster construction of energy efficient structures, and encourage and reward energy efficient behaviors.

9.2.2. Describe how this EE&C plan will leverage and utilize other financial resources, including funds from other public and private sector energy efficiency and solar energy programs.

Where funds are available to customers directly, the company will communicate the availability of other resources as part of the information it provides concerning its own program measures, and will facilitate customers qualifying for such funds, to the extent practicable. Finally, where other incentives are available to customers (such as tax deductions or credits), the company will provide customers with relevant information.

The multi-family housing audit/retrofit program provides services that include the administration of energy efficiency audits, technical assistance for measure level project review and bundling, property aggregation, contractor negotiation and equipment bulk purchasing. Additionally funding sources will be integrated to include program and agency co-funding, performance contracting, grant funding and available financing options. Services also include processing rebate applications and other funding source documentary requirements.

Public Agency Partnerships systematically inventories efficiency gain potential present in local government departments and jurisdictional agencies. Working groups comprised of Duquesne and agency representatives are established to identify project areas within agency departments (and jurisdictional agencies). Working groups define project scopes of service and establish project agreements to co-fund agreed to projects. The project agreements between Duquesne Light and Partnership agencies contain the terms to leverage local agency staff to reach, pre-screen and enroll program participants. The utility and the agency split specified program costs. The partnership

puts in place dedicated contacts and a working group structure to identify and evaluate energy efficiency project opportunities within all governmental departments and sub-agencies.

9.2.3. Describe how the EDC will address consumer education for its programs.

Effective customer education is essential to successfully implementing this initiative. Indeed, comprehensive consumer marketing campaigns will generate increased understanding of energy efficiency benefits and demand for energy efficiency measures. Duquesne's customers are diverse. Because the available measures range from simple to comprehensive, no single means of customer communication is likely to succeed in isolation. The benefits of some measures (for instance, consumer-installed efficient lighting) are easily communicated and easily achieved by customers. Benefits of some other measures (for instance, the life-cycle benefits of industrial process measures) are considerably more complex to calculate and installation requires involvement of highly skilled contractors or vendors. Moreover, sustainable energy savings ultimately are best optimized by combining state-of-the-art equipment and materials with modified personal behaviors. Consequently, Duquesne Light will use an extensive combination of means to ensure that appropriate customer education is achieved.

At the threshold level, customer education begins by raising general awareness of energy efficiency. Duquesne Light believes that this threshold goal is best accomplished by repeatedly exposing its customers to short, positive messages that emphasize the general benefits of embracing energy efficiency. The second step involves contemporaneously communicating the array of measures that are available to customers, coupled with messages encouraging customer participation. These customer education initiates are best accomplished through repeated communications in mass media as well as through existing channels of customer contacts, such as billing messages, bill inserts, messages on hold, and other existing customer communications.

All communications designed to raise awareness and encourage participation should also provide a means for customers to learn more. As the assortment of available measures and the benefits of customer participation are effectively communicated, customers will want to learn more. A primary method of communicating the program details is interactive web-based communications. Websites offer one of the most cost-effective means of communicating the details in a manner that is easily accessible to a substantial portion of the customer base. In addition to the cost advantage, web-based information is easily updated, and can provide links to extensive existing information. Because a portion of customers are not web-active, printed materials will also be available to customers who request more information.

The School Energy Pledge (SEP) program which ran in Phase I and Phase II provided information about energy efficiency at school assemblies and classroom curricula linked to state curriculum standards. The SEP program targeted approximately 73,000 primary school students (grades K-5) and provides hands-on lessons linking scientific concepts with practical applications. Students take home what they've learned at school where families implement energy efficiency measures provided through the SEP program. For Phase III, the proposed Community Education program will prepare

middle school and high school students to become energy efficiency auditors and provide hands-on training while they perform energy audits at their schools. The objective is to build the community capacity and early workforce development. Follow-on objectives will be to grow the program so that student energy auditors can "fan out" into their communities performing energy audits at small businesses and residential energy audits for income qualified populations.

Finally, dedicated Watt Choices customer service representatives and commercial and industrial major account representatives are trained to respond to customers who have become aware of the available measures and who respond positively to the participation opportunities. Customers can call in on the dedicated toll free number, 1-888-WATTLEY to directly reach the specialized trained representatives.

As a supplement to communications between the company and its customers, it is essential that reliable customer information is available from material and equipment vendors, contractors and installers. The company will work with suppliers, trade associations, community based organization, faith based organizations, contractors, and vendors in the service territory to ensure that accurate, reliable program information is available from these sources as well.

9.2.4. Indicate that the EDC will provide a list of all eligible federal and state funding programs available to ratepayers for energy efficiency and conservation.

The federal and state funding sources available to the Duquesne Light customers for energy efficiency and conservation have been, and are expected to be, changing rapidly. Consequently, the most effective listing of eligible funding sources is available on the company's website. Listing the eligible programs on the website not only allows the list to be updated rapidly, but can also provide links directly to the websites maintained by the federal and state programs for ease of use by customers.

9.2.5. Describe how the EDC will provide the public with information about the results from the programs.

Since the inception of the Phase I Act 129 Plan, Duquesne Light has had biannual stakeholder meetings where results from the programs are communicated and feedback is solicited from the participants. The stakeholders' presentations are then posted to the Watt Choices website where any interested party can also see the results from the programs. Significant data concerning the results from the programs will also be available to the public on the company's website. This data will include (but not be limited to) information concerning the level of customer participation, the calculated energy savings, description of the associated environmental benefits and other significant program milestones and information.

10. Appendices

A. Commission approved electricity consumption forecast for the period of June 1, 2009 through May 31, 2010.

B. Approved CSP contract(s).

C. Program by program calculation of savings and costs for each program year. Include separate sections for each program with sub-sections for each year describing savings and costs information. Cost data should include for each program (and for General Administrative Cost Areas of Planning, Evaluation and Other) and each program year separate budgets for (see Example Tables 6A, 6B, and 6C):

- Direct Program Costs
  - EDC labor
  - EDC materials and supplies
  - CSP labor
  - CSP materials and supplies
  - Other outside services (define)
  - Customer incentives
  - Other (define)
- Administrative Costs, including but not limited to costs relating to plan and program development, cost-benefit analysis, measurement and verification, and reporting.
- Total costs.
- Cost effectiveness calculations by program and by program year, indicating benefits by category (see Example Table 7A – 7E).

D. Calculation methods and assumptions. Describe methods used for estimating all program costs, including administrative, marketing, and incentives costs; include key assumptions. Describe assumptions and present all calculations, data and results in a consistent format. Reference Appendix D.

Appendix A

Confidential – Filed Under Seal

Exhibit A-1: Monthly Control Area KWh Forecast (2009)

Appendix A

Confidential – Filed Under Seal

Exhibit A-2: Monthly Control Area KWh Forecast (2010)

Appendix B

CSP SERVICES AGREEMENT

This CSP Services Agreement, dated _____, 2015, is made by and between Duquesne Light Company ("DLC" or "Company") and _____("CSP" or ___).

WHEREAS, CSP is in the business of providing information and technical assistance on measures to enable a person to increase energy efficiency or reduce energy consumption services in the utility industry; and

WHEREAS, DLC is an electric distribution company ("EDC") in Pennsylvania; and

WHEREAS, Act 129 of House Bill 2200 was signed into law by Governor Rendell on October 15, 2008, requiring each EDC to create and submit an energy efficiency and conservation plan by July 1, 2009, and the Pennsylvania Public Utility Commission ("Commission") is developing procedures to implement a process for review of EDC filings; and

WHEREAS, CSP has prepared and submitted to DLC proposals, CSP's Proposal for Energy Efficiency and Conservation and Demand Side Response Initiative, dated _____, a copy of which is attached hereto as Exhibit A (the "Proposals"), to provide services regarding the implementation of an EE/Conservation Plan as required for the energy efficiency and conservation and demand side response initiatives recently mandated in the Commonwealth of Pennsylvania by Act 129 of House Bill 2200 (the "Plan"); and

WHEREAS, CSP certifies that it was approved by and is a member of the Commission's Registry of Conservation Service Providers and will maintain such registration with the Commission for the term of the contract; and

WHEREAS, DLC is relying upon the skill and expertise of CSP to implement the Plan as identified in the Proposals and to meet the needs of DLC and to provide the services necessary for the proper and effective energy efficiency and conservation plan compliance.

NOW, THEREFORE, in consideration of the premises and of the mutual benefits and covenants contained herein, the parties hereto, intending to be legally bound hereby, agree as follows:

1. DEFINITIONS

"Applicable Law" means any applicable constitution, charter, act, statute, law, ordinance, code, rule regulation, judgment, decree, writ, order, permit, approval or the like of any Governmental Authority.

"Company" shall mean Duquesne Light Company.

"**Company's Site**" shall mean 411 Seventh Avenue, Pittsburgh, PA 15219.

Appendix B

"**Price**" shall mean the purchase price or prices stated in Exhibit C of the CSP Agreement.

"**CSP Agreement**" shall mean this Agreement, along with Exhibits dated _____).

"**Services**" shall mean CSP services, Work Product and any other work performed by CSP necessary to fulfill CSP's obligations under the CSP Agreement.

"**Subcontractor**" shall mean vendors, suppliers and subcontractors of any tier and any other persons or entities contracting directly or indirectly with CSP for or in regard to the CSP Agreement.

"**Work**" shall mean CSP services. Work Product and other work performed by Contractor as necessary to fulfill CSP's obligations under the CSP Agreement.

"**Work Product**" shall mean studies, reports, evaluations, designs, drawings, procedures, specifications, plans and all other documentation and deliverables which are prepared, produced or acquired by CSP for the Work or at the request or direction of Company in connection with the Plan's requirements for reduction in demand and consumption.

2. ENGAGEMENT OF CSP; CSP'S WORK

Subject to the terms and conditions of this CSP Agreement, DLC hereby engages CSP to properly and completely design, submit and assist with the implementation of an energy efficiency and conservation plan in compliance with Act 129 of House Bill 2200. CSP shall perform the Work in a professional and workmanlike manner and with accuracy and reasonable care and skill. Specifically, the Services to be provided are shown on Exhibit C.

3. CSP'S ACKNOWLEDGMENT

CSP, by performing the Work and/or delivering the Work Product, by any performance under this CSP Agreement and/or by written acknowledgement, accepts the offer contained in this Agreement and such acceptance of the offer is expressly limited to the terms and conditions as set forth herein. Any term or condition proposed by CSP, in the Proposals or otherwise, which is different from, conflicts with or adds to any of the provisions of this CSP Agreement, shall be deemed to materially alter the provisions of this CSP Agreement and is hereby objected to and rejected by DLC. Except as expressly provided herein, under no circumstances shall any term and/or condition of the Proposal or CSP's sales documents or otherwise become part of this CSP Agreement.

4. PROJECT SCHEDULE

(a) CSP shall design, submit and assist with the implementation of an energy efficiency and conservation plan to meet all the needs and requirements of DLC, applicable laws and applicable standards, to achieve all the requirements identified in the Proposals and to allow DLC to properly and efficiently implement a Plan as defined in the Scope and

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Exhibit C. Company shall be entitled to implement adequate provisions and procedures for monitoring performance quality and rate of progress. Such is set forth in more detail in Exhibit C.

(b) (i) Except as expressly set forth herein, CSP is authorized to commence the Work and shall perform the Work in accordance with and within the time schedule contained in the project schedule attached hereto as Exhibit B (the "Project Schedule").

(ii) If at any time CSP determines that it is behind schedule or is unable to meet any milestone set forth in the Project Schedule, CSP shall, within five (5) days of its knowledge of such delay, promptly notify DLC, in writing, of any anticipated material departure from the Project Schedule and if CSP has reason to believe that a milestone or the Completion Date will not be met and shall specify in said notice corrective action planned by CSP to timely complete the Work or any portion thereof; provided, however, that such notice shall not relieve Vendor of any of its obligations under the CSP Agreement or its obligations to take all actions necessary to achieve the timely and proper completion of the Work. At all times, CSP shall take such actions as may be necessary to facilitate the timely and proper completion of the Work on or prior to any applicable milestones set forth in the Project Schedule or by the Completion Date.

(iii) CSP understands and agrees that time is of the essence with respect to the dates and times set forth in the Project Schedule, including, but not limited to, the Completion Date, and for performance of the Work.

5. PRICE AND PAYMENT

The price or compensation to be paid to CSP shall be as was bid by CSP Provider and accepted herein by Company upon acceptable performance of the Services. Those payment arrangements are shown in Exhibit D. Compensation shall be performance based, and rewards are provided for achieving successful results and deductions are made for not achieving successful results, as agreed to in Exhibit D.

Unless otherwise agreed upon, statements must be submitted monthly, within 30 days after the end of a billing month. Itemized statements for services and expenses should be submitted directly to Dave Defide, Duquesne Light Company, 411 Seventh Avenue, Pittsburgh, PA 15219. If any (portion) of the Work does not conform to the requirements of the CSP Agreement upon inspection by Company, a corresponding portion of the Price may be withheld by Company until the nonconformity is corrected. Invoices shall be paid within 45 days.

6. WARRANTIES

CSP represents, warrants and guarantees that the Work provided under the CSP Agreement shall be: (a) provided in accordance with, and conform to, the requirements of the CSP Agreement; (b) provided in accordance with the standard of care consistent with generally accepted industry practices and procedures in CSP's particular area of expertise; and (c) suitable for the specified purposes.

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CSP represents, warrants and guarantees that it is not an affiliate of Duquesne or any other Pennsylvania EDC. If CSP should merge with a Pennsylvania EDC during the term of the CSP Agreement, then the CSP shall immediately notify Duquesne and provide for automatic termination of the CSP Agreement.

CSP represents, warrants and guarantees that it will conduct criminal background checks for all employees of the CSP that will enter a customer's premises or otherwise have personal contact with an EDC customer.

If, during the sixty-day period following completion of the Work, it is shown there is an error in the Work caused solely by CSP's failure to meet such standards and Company has notified CSP in writing of such error within that period, CSP shall re-perform, at no additional cost to Company, such Work as may be necessary to remedy such error.

Company shall have no liability for defects in the Work attributable to CSP's reliance upon or use of data, design criteria, drawings, specifications or other information furnished by Company.

7. OWNERSHIP RIGHTS

CSP warrants that the Work shall not infringe or misappropriate the intellectual property rights of any third parties. Company shall have exclusive use of and own title, rights and interests in and to all Work. All Work shall be considered "work made for hire."

At all times, each party shall retain all of its rights in its drawings details, designs, specifications, databases, computer software, copyrights, trade and service marks, patents, trade secrets, and any other proprietary property.

8. FACILITIES, SUPPLIES AND EQUIMENT

To the extent that CSP's Work must be performed at Company's Site, Company shall furnish the facilities, supplies and equipment which Company determines are reasonably required for CSP to perform Work under the CSP Agreement.

9. TERMINATION

Company may terminate all or part of the CSP Agreement if CSP: performs below acceptable standards, abandons the work; becomes bankrupt or insolvent; is unable to obtain a bond, if required; assigns the CSP Agreement or subcontracts any portion thereof without Company's written consent; or otherwise breaches or fails to comply with the CSP Agreement; provided, however, that prior to such termination, Company must have notified CSP in writing of its intent to terminate the CSP Agreement and the reasons therefore, and CSP must have failed to cure such non-compliance within ten (10) days after receipt of such notice. If Company so terminates the CSP Agreement, Company may complete or contract with a third party to complete all or part of the Work, and CSP shall be

liable to Company for the excess costs to complete all or such part of the Work and any other damage resulting from CSP's non-compliance or breach. Company may suspend all payments to CSP in order to protect ratepayer funds pursuant to Commission order.

Company may, at any time, also terminate by written notice all or part of the CSP Agreement due to modification of its Energy Efficiency/Conservation plan. Upon receipt of such notice, CSP shall bring the work to a prompt conclusion. Company shall pay CSP a proportionate amount of the price due to CSP for the portion of the Work completed up to the effective date of the termination plus costs necessarily incurred directly as a result of the termination, subject to Company's right to audit CSP's books and records. Such payment by Company, however, shall not exceed the total price for the Work set forth in the CSP Agreement.

In all cases, Company may require CSP to transfer title and deliver to Company any contracts, rights, goods, equipment or Work Product produced, received or acquired by CSP for the performance of the CSP Agreement.

10. INDEMNIFICATION

CSP shall defend, indemnify and hold harmless Company, its directors, officers, employees, agents, successors and assigns and customers and users of the goods, equipment and services, from and against, and shall pay, all losses, damages (including consequential, indirect and punitive), costs, liabilities, suits, claims and actions, and all related expenses (including attorneys' fees and expenses and the actual costs of litigation) by reason of injury or death to any person or damage to any property or any accident or event arising or relating to the performance of the CSP Agreement or arising from or relating to the goods, equipment or services or from any other cause to the extent not attributable to the negligence or willful misconduct of Company.

11. INTELLECTUAL PROPERTY INDEMNIFICATION

CSP represents and warrants that all goods, equipment and services shall not and do not infringe any United States or foreign patent, trademark, copyright or other intellectual property right of any third party. CSP shall defend, indemnify and hold harmless Company and its directors, officers, employees, agents, successors and assigns from and against, and shall pay, all losses, damages (including consequential, indirect and punitive), costs, liabilities, suits, claims and actions, and all related expenses (including attorneys' fees and expenses and the actual costs of litigation) based on or arising from an allegation or claim that any goods, equipment or services or parts thereof furnished by CSP infringe or misappropriate the rights of others; and/or if their use by Company is enjoined, CSP shall at Company's option and CSP 's expense either: (a) procure for Company the right to continue using the goods, equipment and services or parts thereof; (b) replace the same with substantially equivalent goods, equipment or services or parts thereof that do not infringe or misappropriate the rights of others; (c) modify the same so they no longer infringe or misappropriate the rights of others; or (iv) refund the price and the transportation and installation costs to Company.

CSP shall obtain from all Subcontractors similar indemnity protection for Company.

12. LIMITATION OF LIABILITY

Company shall not be liable to CSP for any indirect, incidental, special, liquidated, punitive or consequential damages or damages for delay in performance and/or failure to perform, irrespective of whether claims or actions for such damages are based upon contract, tort, negligence, strict liability, warranty or otherwise. CPS's liability for performance shall be limited as set forth in the compensation section except for acts of negligence, misconduct, or intentional acts.

13. CHANGES

Company may, at any time by a written change order, make changes to the scope of the CSP Agreement ("Change Order"). If any change results in an increase or decrease in the quantity or cost of the goods, equipment or services or otherwise materially affects the CSP Agreement, the Change Order will include an equitable adjustment in the price, the schedule and/or any other affected provisions. Any objection by CSP to the equitable adjustment set forth in a Change Order must be asserted within seven (7) business days after receipt of the Change Order by CSP. Notwithstanding such objection, if directed by Company, CSP shall proceed with the change and performance of the Work.

14. SUSPENSION OR INTERRUPTION OF WORK

Company may direct CSP, in writing, to suspend or interrupt all or any part of the Work for such period of time as Company may determine to be appropriate. CSP shall mitigate the costs of such suspension or interruption. Company agrees to reimburse CSP for those expenses necessarily and directly incurred as a result of such suspension or interruption, subject to Company's right to audit CSP's books and records.

15. CONFLICTS, ERRORS AND OMISSIONS

In the event CSP becomes aware of any conflict, error or omission in the documents comprising the CSP Agreement, CSP shall promptly bring the discrepancy to the attention of Company. Such discrepancy shall be resolved by Company in its sole discretion.

16. INSPECTIONS; MONITORING PERFORMANCE QUALITY AND RATE OF PROGRESS

Company may inspect, at all reasonable times, the progress of the Work, including work performed at CSP's or Subcontractor's facilities. Also, if the CSP Agreement, laws, ordinances, rules, regulations or orders of any governmental authority require any portion

of the Work to be inspected, tested or approved, CSP shall give Company reasonable notice to permit Company to observe such inspection, testing or approval. CSP shall provide Company with periodic status reports during the course of the Work.

17. COST ACCOUNTS AND INFORMATION/AUDITS

CSP shall maintain detailed separate cost data for each CSP Agreement in accordance with generally accepted accounting principles. CSP's records pertaining to the cost of the Work (other than fixed prices agreed to prior to performance of the Work) and CSP's tax records shall be open at all reasonable times for inspection or audit by Company or its representative(s). Company or its representative(s) shall, at all reasonable times, have access to the premises, materials, instructions, working papers, plans, drawings, specifications, memoranda and other information of CSP pertaining to the Work. All CSP's purchase orders or contracts with Subcontractors shall provide that Company or its representative(s) shall have the right to audit Subcontractors' charges to CSP. Company's rights under this Article shall terminate five (5) years after expiration of the warranty periods.

18. INSURANCE

Prior to commencing any portion of the Work, CSP shall properly maintain the following coverage: Statutory Workers' Compensation Insurance in full compliance with the Workers' Compensation and Occupational Disease Acts of each and every state in which Work is to be performed and U.S. Longshoremen's and Harbor Workers' Compensation Acts, if applicable; Employer's Liability Insurance with a limit of not less than $500,000; Comprehensive General Liability Insurance including Premises-Operation Independent Contractor's Protective, Products, Completed Operation, and Blanket Contractual Liability coverages with a combined single limit of not less than $1,000,000 per occurrence and $2,000,000 aggregate; Excess Umbrella Liability Insurance with a single limit of not less than $2,000,000; and Automobile Liability Insurance covering all owned, hired and non-owned vehicles with a combined single limit of not less than $1,000,000 per occurrence. CSP shall provide Company with a certificate of insurance specifically evidencing the coverages required above, naming the Company as an additional insured, except under the Workers' Compensation Policy, and stating the policy numbers and the inception and ex-piration dates of all policies. The certificate of insurance shall also provide for thirty (30) days' prior written notice to Company in the event of cancellation or any material alteration of any policy. The certificate of insurance shall be furnished to Company prior to commencement of any portion of the Work. The Property Damage Liability Insurance shall include the Broad Form Comprehensive General Liability coverage.

19. TAXES

The price set forth in the CSP Agreement shall include, unless otherwise expressly set forth in the CSP Agreement, all federal state and local sales and use taxes applicable to the

manufacture and/or sale of the goods and equipment and/or the performance of the services.

Company will provide to CSP, upon CSP 's request, a tax exemption certificate for taxes for the Work that are exempt under Pennsylvania's Sales and Use Tax laws.

Upon Company's request, CSP shall provide evidence satisfactory to Company of the payment of any taxes which CSP is required to pay. CSP shall also provide to Company such additional information as Company may request to facilitate the determination of taxes for which Company is responsible, if any.

20. CONFIDENTIAL/PROPRIETARY INFORMATION

CSP agrees to treat as confidential and proprietary any of Company's information which is not generally known to the public and to exercise the same care to prevent the disclosure of such information as CSP exercises to prevent disclosure of its own proprietary and confidential information; however, CSP may disclose such information as required by law or court order. Furthermore, Company's information shall be utilized by CSP only in connection with performance of CSP's obligations under the CSP Agreement.

21. PUBLICITY

CSP shall not use Company's name nor issue any publicity releases, including but not limited to, news releases and advertising, relating to the CSP Agreement and Services without the prior written consent of Company.

22. FORCE MAJEURE

Neither party shall be liable for any failure or delay in performing its obligations under the CSP Agreement, or for any loss or damage resulting therefrom, due to causes beyond its reasonable control, including but not limited to, acts of God, public enemy or government, riots, fires, natural catastrophe, strikes or epidemics. In the event of such failure or delay, the date of delivery or performance shall be extended for a period not to exceed the time lost by reason of the failure or delay; provided that Company may terminate the CSP Agreement if the period of failure or delay exceeds fifteen (15) days. Company shall have no obligation to make any payments to CSP during the period of failure or delay. Each party shall notify the other promptly of any failure or delay in, and the effect on, its performance.

23. ASSIGNMENT

CSP shall not assign the CSP Agreement, in whole or in part, nor contract with any Subcontractor for the performance of the same or any of its parts, without first obtaining

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Company's written consent. Company's consent shall not be construed as discharging or releasing, nor shall it discharge or release, CSP in any way from the performance of the Work or the fulfillment of any obligation under the CSP Agreement.

24. NOTICES

Any notice required under the CSP Agreement shall be in writing and sent to the CSP and Company at their respective addresses identified below:

If to DLC: Dave Defide
Duquesne Light Company
411 Seventh Avenue
Pittsburgh, PA 15219.
Via e-mail: ddefide@duqlight.com

If to CSP:

25. INDEPENDENT CONTRACTOR

CSP shall operate as an independent contractor in the performance of the CSP Agreement and not as an agent or employee of Company. CSP shall ensure that neither it nor its agents or employees shall act or hold themselves out as agents or employees of Company. CSP shall have complete control of its agents and employees engaged in the performance of the Work.

26. PRIORITY OF DOCUMENTS

In the event of conflict among the various documents comprising the CSP Agreement, the conflict shall be resolved according to the priority given to the documents in the Purchase Order. If no priority is indicated in the Purchase Order, the conflict shall be resolved according to Article 14, Conflicts, Errors and Omissions.

27. SEVERABILITY

If any provision(s) of the CSP Agreement is prohibited by law or held to be invalid, illegal or unenforceable, the remaining provisions thereof shall not be affected, and the CSP Agreement shall continue in full force and effect as if such prohibited, illegal or invalid provisions had never constituted a part thereof, with the remaining provisions of the CSP Agreement being enforced to the fullest extent possible.

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28. SURVIVAL

The obligations and rights of the parties pursuant to the Warranties, Liens, Indemnification, Intellectual Property Indemnification, Limitation of Liability, Cost Accountants and Information/Audits and Confidential/Proprietary Information shall survive the expiration or early termination of the CSP Agreement.

29. MBE/WBE

It is the policy of Company to stimulate the growth of Certified Minority, Women and Disabled Business Enterprises (MBEs, WBEs and DBEs) by encouraging their participation in Company's procurement activities and by affording them an equal opportunity to compete for Company's procurements. CSP agrees to carry out this policy to the fullest extent consistent with the requirements of the CSP Agreement (a) through the award of subcontracts to MBEs, WBEs and DBEs or (b) if CSP is a MBE, WBE or DBE, through the use of its own forces. CSP shall include this policy as a provision in all subcontracts.

30. LAWS, CODES, RULES, REGULATIONS

CSP and its Subcontractors, at their own expense, shall obtain all necessary licenses and permits and shall comply with all applicable federal, state and local laws, statutes, ordinances, codes, rules and regulations relating to performance of the Work and the CSP Agreement, including but not limited to, safety, products liability, environment, labor standards and workers' compensation laws.

CSP and its Subcontractors shall also comply with Company's policies, rules and procedures.

31. HAZARDOUS AND DANGEROUS GOODS

For any goods or equipment provide by CSP pursuant to the CSP Agreement which are defined as hazardous or dangerous under any applicable law, rule or regulation, CSP shall provide Company with hazardous warning and safety handling information, including Material Safety Data Sheets, and appropriate labeling for all such goods and equipment.

32. ELECTRIC COMMERCE

At Company's request, Company and CSP may facilitate business transactions for the CSP Agreement by electronically transmitting data. Any data digitally signed pursuant to this Article and electronically transmitted shall be as legally sufficient as a written and signed paper document exchanged between the parties, notwithstanding any legal requirement that the document be in writing or signed.

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33. GOVERNING LAW/JURISDICTION

The CSP Agreement shall be governed by and interpreted in accordance with the laws of the Commonwealth of Pennsylvania, excluding the choice of law and conflicts of law provisions. Any litigation arising from or relating to the CSP Agreement shall only be filed in state or federal court in and for Allegheny County, Pennsylvania and CSP hereby consents and submits to the exclusive jurisdiction of such courts.

34. ENTIRE AGREEMENT

The CSP Agreement contains the entire understanding and agreement of Company and CSP with respect to the subject matter hereof and supersedes and replaces all prior agreements and commitments with respect thereto. There are no oral understandings, terms or conditions and neither Company nor CSP has relied upon any representation, express or implied, not contained in the CSP Agreement.

35. AMENDMENT

Except as expressly set forth herein, no provision of the CSP Agreement may be changed, modified, waived, terminated or amended except by written instrument executed as appropriate by Company and/or CSP.

36. WAIVER

Any failure of Company to enforce any of the provisions of the CSP Agreement or to require compliance with any of its terms at any time during the term of the CSP Agreement shall in no way affect the validity of the CSP Agreement, or any part thereof, and shall not be deemed a waiver of the right of Company thereafter to enforce any and each such provision.

37. CAPTIONS

The captions contained in the CSP Agreement are for convenience and reference only and in no way define, describe, extend or limit the scope or intent of the CSP Agreement or the intent of any provision contained therein.

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IN WITNESS WHEREOF, the parties have executed this Agreement on the respective dates entered below.

DUQUESNE LIGHT COMPANY CSP

By:_____ By:_____

Name: _____ Name:_____

Title:_____ Title:_____

Date:_____ Date: _____

Appendix B

EXHIBIT A: BID MATERIALS

Bid materials Sent, Received and Accepted VIA POWERADVOCATE EVENT

Appendix B

EXHIBIT B: PROJECT SCHEDULE

The project schedule will be determined after RFP process is complete

Appendix B

EXHIBIT C: SCOPE OF WORK

The scope of work will be determined after RFP process is complete.

Appendix B

EXHIBIT D: COMPENSATION

Appendix C

Program by program calculation of savings and costs for each program year. Include separate sections for each program with sub-sections for each year describing savings and costs information. Cost data should include for each program (and for General Administrative Cost Areas of Planning, Evaluation and Other) and each program year separate budgets for (see Example Tables 6A, 6B, and 6C):

- Direct Program Costs
  - EDC labor
  - EDC materials and supplies
  - CSP labor
  - CSP materials and supplies
  - Other outside services (define)
  - Customer incentives
  - Other (define)
- Administrative Costs, including but not limited to costs relating to plan and program development, cost-benefit analysis, measurement and verification, and reporting.
- Total costs.
- Cost effectiveness calculations by program and by program year, indicating benefits by category (see Example Table 7A – 7E for TRC and Table 8A-8E for Net TRC).

Appendix D

Calculation methods and assumptions. Describe methods used for estimating all program costs, including administrative, marketing, and incentives costs; include key assumptions. Describe assumptions and present all calculations, data and results in a consistent format. Reference Appendix D.

Administrative Costs: EE&C Plan program administrative costs are divided into two cost types: Common administration costs (Portfolio Administration) and direct cost of implementing programs. Cost type derivation is unique and is addressed discretely herein.

Portfolio Admin: Portfolio Admin costs are identified, by program in Table 6A and are composed of those program costs that primarily do not vary by program production (transactional volume or savings impact) and occur though the Phase III performance period. Projected costs for utility staff labor is approximately 24%, marketing 6%, EM&V (measurement) 37%, other implementation services 33%. Portfolio Admin costs are allocated to programs based on projected energy savings, except for the demand response program costs. Staff, marketing and measurement cost amounts are based on historic and anticipated costs; implementation services include tracking system support and data management; quality assurance / quality control engineering support and professional services. Demand Response program Portfolio Admin is estimated at 10% of total projected administrative costs, consistent with program implementation costs incurred in Phase I demand response program implementation.

Program Direct Administrative Costs: Direct administrative costs are program-specific, base documented costs to implement the programs during the last two Act 129 phases. These cost estimates result from competitive solicitations to implement the current programs and research of the cost to implement similar programs for newly added programs. This applies only to the Savings by Design residential new constriction program, all other programs have cost bases in Phase II, escalated for the Phase III performance period.

Incentives:

Energy Efficiency programs: Incentive amounts are intended to offset the incrementally higher cost of highly efficient appliances and equipment. The *amount* paid to participating customers for per unit of measure (*lamp*, insulation *square fo*ot, motor *HP*, air conditioner *ton,* etc) is addressed as a percentage of that incrementally higher cost. In this way, the rebates amounts to X% of the given measure's incremental cost (incentive level). Incremental measure costs are documented, referenced to the SWE incremental costs database[53], California Public Utilities Commission Database of Energy Efficient Resources (DEER), invoice data from PY 5-6 and specific measure cost research.

Phase III EE&C Plan incentive amounts were established using a process that started with the incentive levels published in the SWE 2015 energy efficiency potential study[54] to render the Base Achievable forecast. These "Phase I/II EDC Performance Benchmarking" incentive levels were found to be roughly 57.5% for the residential sector and 25% for the commercial and industrial sectors. To correct for the influence of incentive capping, baseline commercial and industrial incentive levels were adjusted to 35%. Incentive capping occurs when incentives are paid based on energy saved, and resulting incentive amounts that are high enough to be capped

[53] Ibid.
[54] SWE February 2015 Statewide EE Potential Study Section 1.8 Achievable Potential, page 20.

by program policy (usually a percentage of cost or a fixed amount). The higher 35% C&I incentive levels are consistent with Duquesne Light's past program incentives that were established using national benchmarking and payback probability acceptance curves[55]. The resulting incentive amounts were compared with Duquesne Light's PY 5-6 incentive amounts (current program offerings) and the other six PA EDCs, and adjusted as indicated. These incentive amounts were then escalated at 2.5% for the Phase III five-year period, then averaged over the same period. Incentive amounts are stated in Figures 13 and 28.

Plan Development Methodology: The Phase I EE&C Plan was based on detailed information about utility customer populations, building stock and regional energy use contained in Duquesne Light's filed energy efficiency potential forecast.[56] Duquesne Light's Phase II EE&C Plan was updated through the use and application of information contained in the Pennsylvania Public Utility Commission adopted statewide energy efficiency potential study[57] and supporting end-use saturation studies.[58, 59] The Phase III EE&C Plan updates the Phase II Plan through the use and application of information contained in the Commission adopted Phase III SWE Statewide Energy Efficiency Potential Study (Feb 2015) and the SWE Statewide Demand Response Potential Study (Feb 2015).[60] Based on the latter potential studies, the Commission adopted Phase III EDC specific energy efficiency and demand response reduction targets and approved EDC-specific acquisition costs.[61]

Given the aforementioned information and an understanding about building stock-specific technology applications capable of rendering the targeted reductions, the project team identified optimal delivery mechanisms. Energy efficiency delivery mechanisms or "programs" described in this Plan were adopted from Phase I and II benchmarking[62] as well as an assessment of past program performance. Portfolio program content is responsive to requirements of Act 129 with regard to carve-outs for the Governmental/Educational/Non-profit entities, the Low Income segment, and; the Commission's requirements for at least one "comprehensive measure" for residential and small commercial rate classes in EE&C Plans going forward.[63]

Phase III EE&C Plan measure content and measure level savings impacts reflect 1) Phase I and Phase II planning, 2) measure activity documented during the previous two years of program operation (PY5 and PY6), and; 3) measures contained in, and deemed savings specified by, the 2016 PA Technical Reference Manual. Projected savings impacts include EISA 2007 adjustments to base efficiencies for general service incandescent lamps effective 2016 and 2021. Duquesne Light also adjusted Phase III EE&C Plan measure content to reflect demonstrated needs to promote evolving energy efficient technologies. The aforementioned are the bases for EE&C Plan goals, budgets and programs.

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[55] Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation and Demand Response Plan Docket No. M-2009-2093217, June 30, 2009; Part (3) Energy Efficiency and Demand Side Response Study, MCR Performance Solutions, LLC, June 26, 2009.
[56] ibid
[57] Electric Energy Efficiency Potential for Pennsylvania, GDS Associates, Inc, May 10, 2012
[58] Pennsylvania Statewide Residential End-Use and Saturation Study, GDS Associates, Inc, April 18,2012
[59] Pennsylvania Statewide Commercial & Industrial End-Use & Saturation Study, GDS Associates, April 18,2012
[60] ibid
[61] June 11, 2105 PA PUC adopted Implementation Order at Docket No. M-2014-2424864
[62] Ibid, footnote 4
[63] Implementation Order Section A, subsection 1, Evaluation of the EE&C Program and Market Potential, subsection b) Market Potential Assessment, page 20.

Appendix D

Summary of key assumptions:

Phase III EE&C Plan Targets: EE&C Plan reduction targets exceed the Commission mandated reductions by 2% to account for prospective EM&V adjustments as well as overall-portfolio short-falls. The Plan assumes a 3% Phase II carry-over, to achieve projected savings impacts amounting to 105% of mandated reductions.

Measure Savings: Per 2016 PA TRM and use of demonstrated net savings impacts for non-TRM "CUSTOM" measures.

Avoided costs: A full description of avoided costs assumptions and development methodology is provided at Section 8.

Appendix D

Residential Programs	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	TRC Cost	Program Benefits	Capacity Benefits		Energy Benefits		TRC
				Administration	Incentives				Generation	Trans/Dist	Peak	Off Peak	
Residential Efficiency	85,894,931	9,267	$1,908,018	$6,281,255	$7,483,335	$15,672,607	$24,962,276	$41,149,145	$4,829,117	$4,001,605	$21,461,731	$10,856,691	1.6
Direct Load Control	0	2,205	$73,094	$657,846	$729,993	$1,460,933	$1,051,180	$721,358	$404,139	$317,219	$0	$0	0.7
Appliance Recycling	8,815,961	987	$195,832	$802,370	$301,158	$1,299,360	$1,371,239	$3,373,338	$359,002	$305,331	$1,609,656	$1,099,350	2.5
Home Energy Reports	24,146,105	0	$536,367	$2,185,222	$0	$2,721,589	$2,177,202	$3,004,409	$0	$0	$1,827,423	$1,176,986	1.4
Whole House Retrofit	1,750,916	162	$38,894	$559,655	$625,000	$1,223,549	$470,685	$677,114	$56,241	$52,797	$400,036	$168,040	1.4
Savings by Design	409,000	59	$9,085	$1,380,007	$177,506	$1,566,598	$1,092,349	$281,535	$34,504	$28,055	$145,278	$73,699	0.3
Low Income Efficiency	16,550,885	353	$367,651	$3,736,394	$0	$4,104,045	$3,267,415	$3,061,178	$122,684	$115,170	$1,836,177	$987,147	0.9
Total	**137,567,798**	**13,033**	**$3,128,941**	**$15,602,749**	**$9,316,991**	**$28,048,681**	**$34,392,346**	**$52,268,078**	**$5,805,688**	**$4,820,176**	**$27,280,301**	**$14,361,914**	1.5

Small C&I	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	TRC Cost	Program Benefits	Capacity Benefits		Energy Benefits		TRC
				Administration	Incentives				Generation	Trans/Dist	Peak	Off Peak	
Express Efficiency	35,147,555	6,566	$780,746	$3,086,720	$4,025,322	$7,892,788	$9,345,667	$21,021,420	$2,934,832	$2,648,964	$10,291,273	$5,146,351	2.2
Small Nonres Upstream Lighting	19,464,329	5,850	$432,369	$932,573	$1,431,190	$2,796,132	$3,020,510	$6,584,998	$1,269,080	$1,231,528	$2,721,240	$1,363,150	2.2
Small Commercial Direct-Install	10,934,231	1,282	$242,886	$3,985,527	$442,836	$4,671,250	$3,325,124	$6,118,300	$704,971	$577,187	$2,551,612	$2,284,530	1.8
Multifamily Family Housing	8,912,014	551	$197,966	$3,057,536	$998,666	$4,254,168	$2,587,672	$4,985,737	$336,067	$276,266	$1,947,433	$2,425,972	1.9
Total	**74,458,130**	**14,250**	**$1,653,967**	**$11,062,356**	**$6,898,014**	**$19,614,338**	**$18,278,973**	**$38,710,455**	**$5,244,950**	**$4,733,944**	**$17,511,558**	**$11,220,004**	2.1

Large C&I	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	TRC Cost	Program Benefits	Capacity Benefits		Energy Benefits		TRC
				Administration	Incentives				Generation	Trans/Dist	Peak	Off Peak	
Commercial Efficiency	50,575,285	5,660	$1,123,448	$3,359,415	$4,699,273	$9,182,136	$15,615,927	$30,165,616	$2,929,694	$2,318,620	$16,844,477	$8,072,825	1.9
Large Nonres Upstream Lighting	46,966,828	14,115	$1,043,292	$2,250,270	$3,453,417	$6,746,980	$7,288,397	$15,889,399	$3,062,252	$2,971,638	$6,566,269	$3,289,240	2.2
Industrial Efficiency	84,021,466	9,403	$1,866,402	$5,581,045	$7,806,972	$15,254,418	$25,942,970	$50,114,582	$5,182,603	$4,231,415	$27,140,549	$13,560,017	1.9
DR-Curtailable	0	41,895	$411,782	$3,706,042	$4,160,961	$8,278,786	$5,951,821	$13,705,795	$7,678,639	$6,027,156	$0	$0	2.3
Total	**181,563,579**	**71,073**	**$4,444,925**	**$14,896,772**	**$20,120,623**	**$39,462,320**	**$54,799,115**	**$109,875,392**	**$18,853,187**	**$15,548,829**	**$50,551,295**	**$24,922,081**	2.0

Governmental / Educational / Nonprofit	Savings kWh	Savings kW	Portfolio Administration	Direct Program Costs		Total Program Cost	TRC Cost	Program Benefits	Capacity Benefits		Energy Benefits		TRC
				Administration	Incentives				Generation	Trans/Dist	Peak	Off Peak	
Public Agency Partnership	46,772,369	5,234	$1,038,973	$3,106,810	$4,345,920	$8,491,702	$14,329,469	$27,897,368	$3,180,422	$2,710,854	$14,318,539	$7,687,553	1.9
Community Education	9,372,444	950	$208,194	$1,827,627	$0	$2,035,820	$4,004,337	$5,211,383	$499,675	$418,428	$2,817,238	$1,476,042	1.3
Total	**56,144,813**	**6,185**	**$1,247,167**	**$4,934,436**	**$4,345,920**	**$10,527,523**	**$18,333,806**	**$33,108,751**	**$3,680,097**	**$3,129,282**	**$17,135,777**	**$9,163,595**	1.8

Grand Total	**449,734,320**	**104,539**	**$10,475,000**	**$46,496,312**	**$40,681,549**	**$97,652,861**	**$125,804,240**	**$233,962,676**	**$33,583,921**	**$28,232,231**	**$112,478,930**	**$59,667,594**	1.9

11. Tables for Pennsylvania EDC Energy Efficiency and Conservation Plans

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Contents

[64] Tables 8A - 8D contain NET EE&C Plan cost effectiveness projections. Consistent with the Commission's 2016 TRC Order Section VI. Net-To-Gross (NTG) Adjustments, A. Basis of TRC Test Benefits, (c) Final Resolution, page 47 " . . . EDCs shall report TRC test ratios in Phase III EE&C plans two ways: (1) Based on projected gross savings; and (2) Based on project net savings." In an effort to comply with the Commission's request, in this table Duquesne Light applied available NTG findings based on the evaluation of Phase II Y6 programs. There is no NTG research available or applicable to programs newly added to the portfolio in Phase III, these program have a NTG of 100% applied herein.

Table 1A: Portfolio Summary of Lifetime Costs and Benefits of Energy Efficiency Measures

Portfolio	Discount Rate	Total Discounted Lifetime Costs ($000)	Total Discounted Lifetime Benefits ($000)	Total Discounted Net[A] Lifetime Benefits ($000)	Cost-Benefit Ratio (TRC)
Residential (*exclusive of Low-Income)* [B]	6.9%	$30,073,751	$48,485,542	$18,411,791	1.6
Residential Low-Income	6.9%	$3,267,415	$3,061,178	-$206,237	0.9
Commercial/Industrial Small	6.9%	$18,278,973	$38,710,455	$20,431,482	2.1
Commercial/Industrial Large	6.9%	$48,847,294	$96,169,597	$47,322,302	2.0
Governmental/Educational/Non-Profit	6.9%	$18,333,806	$33,108,751	$14,774,945	1.8
Total	6.9%	$118,801,239	$219,535,523	$100,734,284	1.8

[A] "Net" refers to the arithmetic difference between the previous two columns. It does not refer to net verified savings.

[B] The June 11, 2015 Implementation Order disallowed the inclusion of low-income participation in standard, non-low-income-specific residential programs in the calculation of savings towards the 5.5% low-income carve-out. *See June 11, 2015 Implementation Order at 69.*

Table 1B: Portfolio Summary of Lifetime Costs and Benefits of Demand Response Measures

Portfolio	Discount Rate	Total Discounted Lifetime Costs ($000)	Total Discounted Lifetime Benefits ($000)	Total Discounted Net[A] Lifetime Benefits ($000)	Cost-Benefit Ratio (TRC)
Residential (*exclusive of Low-Income)* [B]	6.9%	$1,051,180	$721,358	-$329,822	0.7
Commercial/Industrial Large	6.9%	$5,951,821	$13,705,795	$7,753,974	2.3
Total	6.9%	$7,003,000	$14,427,153	$7,424,152	2.1

[A] "Net" refers to the arithmetic difference between the previous two columns. It does not refer to net verified savings.

[B] The June 11, 2015 Implementation Order disallowed the inclusion of low-income participation in standard, non-low-income-specific residential programs in the calculation of savings towards the 5.5% low-income carve-out. *See June 11, 2015 Implementation Order at 69.*

Table 2: Summary of Portfolio Energy and Demand Savings

Cumulative MWh and kW Saved for Consumption Reductions	PY 2016		PY 2017		PY 2018		PY 2019		PY 2020		Total	
	MWh	**kW**	**MWh**	**kW**	**MWh**	**kW**	**MWh**	**kW**	**MWh**	**kW**	**MWh**	**kW**
Baseline (June 2009-May 2010)											14,085,512	
Residential Sector – Cumulative Projected Portfolio EE Savings	48,407		84,712		102,864		114,966		121,017		121,017	
Residential Sector– Cumulative Portfolio DR Reductions				2,205		2,205		2,205		2,205		2,205
Residential Low-Income Sector – Cumulative Portfolio Savings	1,531		4,014		7,738		11,999		16,551		16,551	
Commercial/Industrial Small Sector – Cumulative Portfolio Savings	9,441		22,367		37,258		55,635		74,458		74,458	
Commercial/Industrial Large Sector – Cumulative Savings	29,268		63,232		99,545		140,554		181,564		181,564	
Commercial/Industrial Large Cumulative DR Reductions				41,895		41,895		41,895		41,895		41,895
Governmental/Nonprofit Cumulative Portfolio Savings	5,146		18,245		31,812		46,317		56,145		56,145	
EE&C Plan Total – Energy Savings	93,792		192,569		279,217		369,472		449,734		449,734	
EE&C Plan Total – Demand Reduction				44,100		44,100		44,100		44,100		44,100
EE&C Plan Total – Percentage of Target to be Met	20.9%	100.0%	42.8%	100.0%	62.1%	100.0%	82.2%	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated Phase II Carryover Energy Savings	13,227											
Total Cumulative Savings Phase III + Phase II Carryover Savings	107,019		205,797		292,445		382,700		462,962		462,961.800	
EE&C Plan Total – Percentage of Target Energy Savings to be Met	23.1%		44.5%		63.2%		82.7%		100.0%		100.0%	
Percent Reduction from Baseline											3.3%	
Commission-Identified Goal[1]											440,916	42,000
Percent Savings Above or Below Commission-Identified Goal											105%	105%

Table 3: Summary of Portfolio Costs

	PY 2016		PY 2017		PY 2018		PY 2019		PY 2020	
	$000	%	$000	%	$000	%	$000	%	$000	%
Residential Portfolio Budget	$7,015,825	41.7%	$5,848,211	28.7%	$3,923,126	19.9%	$3,247,231	15.4%	$2,449,311	12.5%
Residential Portfolio DR Budget	$146,188	0.9%	$328,686	1.6%	$328,686	1.7%	$328,686	1.6%	$328,686	1.7%
Residential Low-Income Portfolio Budget	$379,624	2.3%	$615,607	3.0%	$923,410	4.7%	$1,056,792	5.0%	$1,128,612	5.8%
Commercial/Industrial Small Portfolio Budget	$2,486,927	14.8%	$3,405,093	16.7%	$3,922,868	19.9%	$4,841,034	22.9%	$4,958,417	25.3%
Commercial/Industrial Large Portfolio Budget	$5,026,724	29.8%	$5,833,379	28.7%	$6,236,707	31.6%	$7,043,362	33.4%	$7,043,362	35.9%
Commercial/Industrial Large Portfolio DR Budget	$823,565	4.9%	$1,863,805	9.2%	$1,863,805	9.4%	$1,863,805	8.8%	$1,863,805	9.5%
Governmental/Non-Profit Portfolio Annual Budget	$964,883	5.7%	$2,456,141	12.1%	$2,544,011	12.9%	$2,719,750	12.9%	$1,842,738	9.4%
Total Portfolio Annual Budget	$16,843,736	100.0%	$20,350,922	100.0%	$19,742,612	100.0%	$21,100,659	100.0%	$19,614,931	100.0%

Table 4: Program Summaries

	Program Name	Program Market	Program Two-Sentence Summary	Program Years Operated	Lifetime MWh Savings	kW Savings	Percentage of Portfolio and Total Lifetime MWh Savings	
Residential Portfolio Programs (*exclusive of Low-Income)*	Residential Efficiency	Residential	Energy efficiency rebates offset the incrementally higher cost of high-efficiency consumer products. Prescriptive rebates as well as upstream (manufacturere and distributor) instant rebates and online audit tools.	5	1,096,453,191	9,267	19.5%	19.6%
	Appliance Recycling	Residential	Provides customer incentives to recycle refrigerators and freezers; removes inefficient appliacnes from the electric grid.	5	75,746,570	987	2.0%	1.4%
	Home Energy Reports	Residential	Educates participants on electricy consumption to change household behavior leading to less electricty use.	5	72,438,314	0	5.5%	1.3%
	Whole House Audit / Retrofit	Residential	Educates customers on efficency of their home as a system, stimulates comprehensive retrofit activity and provides direct measure installation.	5	8,178,352	162	0.4%	0.1%
	Savings by Design	Residential	Educate new construction stakeholders on energy-efficient home design and provide incentives for meeting ENERGY STAR Home requirements.	5	6,135,000	59	0.1%	0.1%
				Totals for Residential Sector	1,258,951,426	10,475	27.5%	22.6%
Residential Low-Income Sector Programs	Low Income Efficiency	Low Income Residential	Provides tailored home energy reports, whole house audit /retrofit servies and multifamily housing efficiency upgrades.	5	56,034,544	353	3.8%	1.0%
				Totals for Low-Income Sector	56,034,544	353	3.8%	1.0%

Table 4: Program Summaries *(continued)*

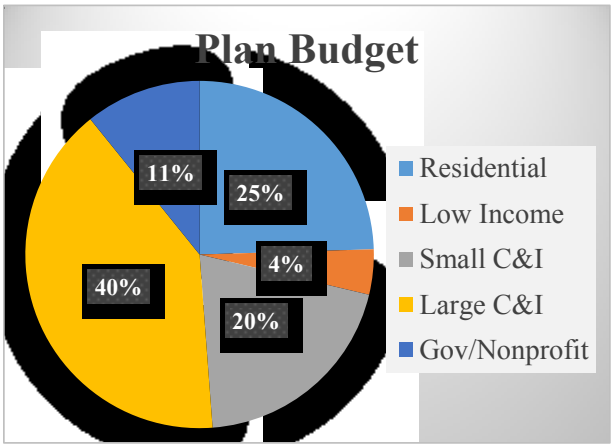
Commercial/Industrial (C&I) Small Portfolio Programs	Express Efficiency	Small C&I Customers	Energy efficiency rebates offset the incrementally higher cost of high-efficiency equipment.	5	731,561,155	6,566	8.0%	13.1%
	Small Nonres Upstream Ltg	Small C&I Customers	Lighting distributor instand rebates promote efficient technologies by reducing their cost. Program particpation benefits by reducing program complexity, as well as customer effort and the time required to apply and process rebate payments.	5	291,964,937	5,850	4.4%	5.2%
	Small Commercial Direct-Install	Small C&I Customers	Provides no-cost energy efficient equipment to small business customers. Installation constractors implement concentated, directed, service area-wide program measures and measure installation servies.	5	141,917,115	1,282	2.5%	2.5%
	Multifamily Family Housing	Small C&I Customers	Program services include the admnistration of energy efficiency audits, technical assistance for measure level project review and bundling, property aggregation, contractor negotiation and equipment bulk pourchasing. Integrates co-funding, performance contracting, grant funding and available financing options.	5	122,472,306	551	2.0%	2.2%
			Totals for C&I Small Sector		1,287,915,513	14,250	16.9%	23.1%

Table 4: Program Summaries *(continued)*

Commercial/Industrial Large Portfolio Programs	Commercial Efficiency	Large C&I Customers	Rebates offset the incrementally higher cost of efficient equipment, distributor instand rebates overcome particpation barriers. Segment specialized CSPs provide energy audits and recommnedations.	5	742,422,867	5,660	11.5%	13.3%
	Large Nonres Upstream Ltg	Large C&I Customers	Lighting distributor instand rebates promote efficient technologies by reducing their cost. Program particpation benefits by reducing program complexity, as well as customer effort and the time required to apply and process rebate payments.	5	704,502,425	14,115	10.7%	12.6%
	Industrial Efficiency	Large C&I Customers	Rebates offset the incrementally higher cost of efficient equipment, distributor instand rebates overcome particpation barriers. Segment specialized CSPs provide energy audits and recommnedations.	5	862,707,399	9,403	19.1%	15.5%
			Totals for C&I Large Sector		2,309,632,692	29,178	41.2%	41.4%
Governmental/Educational/ Non-Profit Portfolio Programs	Public Agency Partnership		Rebates offset the incrementally higher cost of efficient equipment, engagemnt is facilitated by public agency partnerships and specilaized CSPs.	5	574,209,625	5,234	10.6%	10.3%
	Community Education	Residential	High School students learn to perform energy audits, at school and in the larger community; a community capacity bulding program.	5	93,724,440	950	2.1%	1.7%
			Totals for G/E/NP Sector		667,934,065	6,185	12.7%	0
			Totals for Plan		5,580,468,241	60,439	100.0%	100.0%

Table 5: Budget and Parity Analysis Summary

Customer Class	Budget	% of Total EDC Budget	% of Total Budget Exluding Other Expednitures	% of Total Customer Revenue	Difference
Residential	$23,944,636	24.5%	24.5%	42.6%	
Residential Low Income	$4,104,045	4.2%	4.2%	16.4%	
Subtotal	*$28,048,681*	*28.7%*	*28.7%*	*59.0%*	-30.3%
C&I Small	$19,614,338	20.1%	20.1%	16.7%	
C&I Large	$39,462,320	40.4%	40.4%	14.4%	
Subtotal	*$59,076,658*	*60.5%*	*60.5%*	*31.0%*	29.5%
Governmental/Educational/Nonprofit	$10,527,523	10.8%	10.8%	10.4%	
Subtotal	*$10,527,523*	*10.8%*	*10.8%*	*10.4%*	0.4%
All Classes	$97,652,861	100.0%	100.0%	100.0%	
Other Expenditures	*$0*				
Subtotal	$0				
EDC TOTAL	**$97,652,861**				



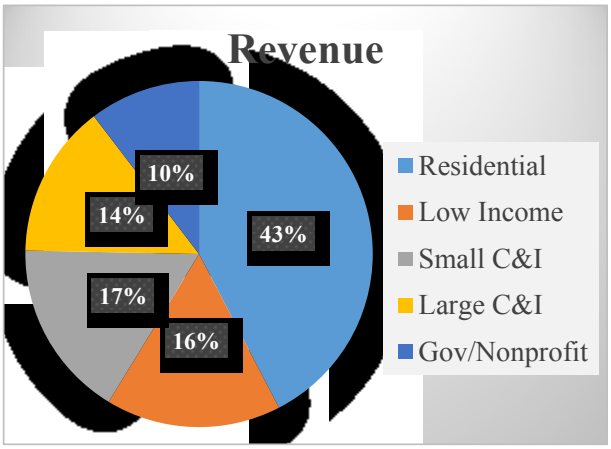


Table 6A: Portfolio-Specific Assignment of EE&C Plan Costs

Residential Portfolio (including Low Income)

EE&C Program	Cost Elements			Totals	% Sector Budget
	Portfolio Administration	Program Administration	Incentives		
Residential Efficiency	$1,908,018	$6,281,255	$7,483,335	$15,672,607	55.9%
Appliance Recycling	$195,832	$802,370.13	$301,158	$1,299,360	4.6%
Home Energy Reports	$536,367	$2,185,222	$0	$2,721,589	9.7%
Whole House Audit / Retrofit	$38,894	$559,654.98	$625,000	$1,223,549	4.4%
Savings by Design	$9,085	$1,380,007	$177,506	$1,566,598	5.6%
Direct Load Control	$73,094	$657,846	$729,993	$1,460,933	5.2%
Low Income Efficiency	$367,651	$3,736,394	$0	$4,104,045	14.6%
Subtotal	$3,128,941	$15,602,749	$9,316,991	$28,048,681	100.0%

Small Commercial/Industrial Portfolio

EE&C Program	Cost Elements			Totals	% Sector Budget
	Portfolio Administration	Program Administration	Incentives		
Express Efficiency	$780,746	$3,086,720	$4,025,322	$7,892,788	40.2%
Small Nonres Upstream Ltg	$432,369	$932,573	$1,431,190	$2,796,132	14.3%
Small Commercial Direct-Insta	$242,886	$3,985,527.30	$442,836	$4,671,250	23.8%
Multifamily Family Housing	$197,966	$3,057,535.63	$998,666	$4,254,168	21.7%
Subtotal	$1,653,967	$11,062,356	$6,898,014	$19,614,338	100.0%

Large Commercial/Industrial Portfolio

EE&C Program	Cost Elements			Totals	% Sector Budget
	Portfolio Administration	Program Administration	Incentives		
Commercial Efficiency	$1,123,448	$3,359,415	$4,699,273	$9,182,136	23.3%
Large Nonres Upstream Ltg	$1,043,292	$2,250,270	$3,453,417	$6,746,980	17.1%
Industrial Efficiency	$1,866,402	$5,581,045	$7,806,972	$15,254,418	38.7%
Large Curtailable DR	$411,782	$3,706,042	$4,160,961	$8,278,786	21.0%
Subtotal	$4,444,925	$14,896,772	$20,120,623	$39,462,320	100.0%

Governmental/Education/Nonprofit Portfolio

EE&C Program	Cost Elements			Totals	% Sector Budget
	Portfolio Administration	Program Administration	Incentives		
Public Agency Partnership	$1,038,973	$3,106,810	$4,345,920	$8,491,702	80.7%
Community Education	$208,194	$1,827,627	$0	$2,035,820	19.3%
Subtotal	$1,247,167	$4,934,436	$4,345,920	$10,527,523	100.0%

All Customer Class Portfolios

EE&C Program	Cost Elements			Totals	% Sector Budget
	Portfolio Administration	Program Administration	Incentives		
Total	$10,475,000	$46,496,312	$40,681,549	$97,652,861	100.0%

Table 6B: Allocation of Common Costs to Applicable Customer Sector

			Class Cost Allocation ($)			
Common Cost Element	**Total Cost ($)**	**Basis for Cost Allocation**	**Residential** *(including low income)*	**Commercial Industrial Small**	**Commercial Industrial Large**	**Governmental Nonprofit Educational**
Portfolio Administration	$10,475,000	Porfolio administration costs inlcude EDC labor, marketing, tracking system costs, measurment (EM&V) and contracted implementation services.	$3,128,941	$1,653,967	$4,444,925	$1,247,167

Table 6C: Summary of Portfolio EE&C Costs

Portfolio	Total Sector Portfolio-Specific Costs	Total Common Costs	Total of All Costs
Residential (Including Low Income)	$24,919,740	$3,128,941	$28,048,681
Commercial/Industrial -- Small	$17,960,370	$1,653,967	$19,614,338
Commercial/Industrial -- Large	$35,017,395	$4,444,925	$39,462,320
Governmental/Educational/Nonprofit	$9,280,356	$1,247,167	$10,527,523
Totals	$87,177,861	$10,475,000	$97,652,861

Table 7A: TRC Benefits Table—Residential

Residential	TRC Costs and Benefits by Program Year											
Program	Program Year	TRC	Total Discounted Lifetime Costs	Total Discounted Lifetime Benefits	Capacity		Energy		DR Load Reductions (kW)		MWh Saved	
					Generation	Tans/Dist	Peak	Off Peak	Annual	Lifetime	Annual	Lifetime
Residential Efficiency	1		$11,452,110	$16,459,658	$1,931,647	$1,600,642	$8,584,692	$4,342,677			34,358	438,581
	2		$8,589,082	$12,344,743	$1,448,735	$1,200,482	$6,438,519	$3,257,007			25,768	328,936
	3		$4,294,541	$6,172,372	$724,368	$600,241	$3,219,260	$1,628,504			12,884	164,468
	4		$2,863,027	$4,114,914	$482,912	$400,161	$2,146,173	$1,085,669			8,589	109,645
	5		$1,431,514	$2,057,457	$241,456	$200,080	$1,073,087	$542,835			4,295	54,823
Program Total		1.6	$24,962,276	$41,149,145	$4,829,117	$4,001,605	$21,461,731	$10,856,691	0	0	85,895	1,096,453
Direct Load Control	1		$255,687									
	2		$255,687	$180,339	$101,035	$79,305			2,205	2,205		
	3		$255,687	$180,339	$101,035	$79,305			2,205	2,205		
	4		$255,687	$180,339	$101,035	$79,305			2,205	2,205		
	5		$255,687	$180,339	$101,035	$79,305			2,205	2,205		
Program Total		0.7	$1,051,180	$721,358	$404,139	$317,219	$0	$0	2,205	2,205	0	0
Appliance Recycling	1		$170,807	$337,334	$35,900	$30,533	$160,966	$109,935			882	7,575
	2		$341,615	$674,668	$71,800	$61,066	$321,931	$219,870			1,763	15,149
	3		$341,615	$674,668	$71,800	$61,066	$321,931	$219,870			1,763	15,149
	4		$427,019	$843,335	$89,751	$76,333	$402,414	$274,837			2,204	18,937
	5		$427,019	$843,335	$89,751	$76,333	$402,414	$274,837			2,204	18,937
Program Total		2.5	$1,371,239	$3,373,338	$359,002	$305,331	$1,609,656	$1,099,350	0	0	8,816	75,747
Home Energy Reports	1		$272,159	$300,441	$0	$0	$182,742	$117,699			2,415	7,244
	2		$408,238	$450,661	$0	$0	$274,113	$176,548			3,622	10,866
	3		$680,397	$751,102	$0	$0	$456,856	$294,247			6,037	18,110
	4		$680,397	$751,102	$0	$0	$456,856	$294,247			6,037	18,110
	5		$680,397	$751,102	$0	$0	$456,856	$294,247			6,037	18,110
Program Total		1.4	$2,177,202	$3,004,409	$0	$0	$1,827,423	$1,176,986	0	0	24,146	72,438
Whole House Audit / Retrofit	1		$29,927	$33,856	$2,812	$2,640	$20,002	$8,402			88	409
	2		$89,782	$101,567	$8,436	$7,919	$60,005	$25,206			263	1,227
	3		$119,710	$135,423	$11,248	$10,559	$80,007	$33,608			350	1,636
	4		$179,565	$203,134	$16,872	$15,839	$120,011	$50,412			525	2,454
	5		$179,565	$203,134	$16,872	$15,839	$120,011	$50,412			525	2,454
Program Total		1.4	$470,685	$677,114	$56,241	$52,797	$400,036	$168,040	0	0	1,751	8,178
Savings by Design	1		$69,455	$14,077	$1,725	$1,403	$7,264	$3,685			20	307
	2		$208,364	$42,230	$5,176	$4,208	$21,792	$11,055			61	920
	3		$277,818	$56,307	$6,901	$5,611	$29,056	$14,740			82	1,227
	4		$416,728	$84,461	$10,351	$8,416	$43,583	$22,110			123	1,841
	5		$416,728	$84,461	$10,351	$8,416	$43,583	$22,110			123	1,841
Program Total		0.3	$1,092,349	$281,535	$34,504	$28,055	$145,278	$73,699	0	0	409	6,135
Low Income Efficiency	1		$379,624	$283,159	$11,348	$10,653	$169,846	$91,311			1,531	5,183
	2		$615,607	$459,177	$18,403	$17,275	$275,427	$148,072			2,483	8,405
	3		$923,410	$688,765	$27,604	$25,913	$413,140	$222,108			3,724	12,608
	4		$1,056,792	$788,253	$31,591	$29,656	$472,816	$254,190			4,262	14,429
	5		$1,128,612	$841,824	$33,738	$31,672	$504,949	$271,466			4,551	15,409
Program Total		0.9	$3,267,415	$3,061,178	$122,684	$115,170	$1,836,177	$987,147	0	0	16,551	56,035
Residential Total		1.5	$34,392,346	$52,268,078	$5,805,688	$4,820,176	$27,280,301	$14,361,914	2205	2205	137,568	1,314,986

Table 7B: TRC Benefits Table—Small Commercial & Industrial

Small Commercial & Industrial		**TRC Costs and Benefits by Program Year**										
Program	**Program Year**	**TRC**	**Total Discounted Lifetime Costs**	**Total Discounted Lifetime Benefits**	**Capacity**		**Energy**		**DR Load Reductions (kW)**		**MWh Saved**	
					Generation	**Tans/Dist**	**Peak**	**Off Peak**	**Annual**	**Lifetime**	**Annual**	**Lifetime**
Express Efficiency	1		$2,273,222	$4,204,284	$586,966	$529,793	$2,058,255	$1,029,270			7,030	146,312
	2		$2,273,222	$4,204,284	$586,966	$529,793	$2,058,255	$1,029,270			7,030	146,312
	3		$2,273,222	$4,204,284	$586,966	$529,793	$2,058,255	$1,029,270			7,030	146,312
	4		$2,273,222	$4,204,284	$586,966	$529,793	$2,058,255	$1,029,270			7,030	146,312
	5		$2,273,222	$4,204,284	$586,966	$529,793	$2,058,255	$1,029,270			7,030	146,312
Program Total		2.2	$9,345,667	$21,021,420	$2,934,832	$2,648,964	$10,291,273	$5,146,351	0	0	35,148	731,561
Small Nonresidential Upstream Lighting	1		$192,052	$329,250	$63,454	$61,576	$136,062	$68,158			973	14,598
	2		$576,157	$987,750	$190,362	$184,729	$408,186	$204,473			2,920	43,795
	3		$768,210	$1,317,000	$253,816	$246,306	$544,248	$272,630			3,893	58,393
	4		$1,152,315	$1,975,499	$380,724	$369,458	$816,372	$408,945			5,839	87,589
	5		$1,152,315	$1,975,499	$380,724	$369,458	$816,372	$408,945			5,839	87,589
Program Total		2.2	$3,020,510	$6,584,998	$1,269,080	$1,231,528	$2,721,240	$1,363,150	0	0	19,464	291,965
Small Commercial Direct-Install	1		$211,421	$305,915	$35,249	$28,859	$127,581	$114,227			547	7,096
	2		$634,262	$917,745	$105,746	$86,578	$382,742	$342,680			1,640	21,288
	3		$845,683	$1,223,660	$140,994	$115,437	$510,322	$456,906			2,187	28,383
	4		$1,268,524	$1,835,490	$211,491	$173,156	$765,484	$685,359			3,280	42,575
	5		$1,268,524	$1,835,490	$211,491	$173,156	$765,484	$685,359			3,280	42,575
Program Total		1.8	$3,325,124	$6,118,300	$704,971	$577,187	$2,551,612	$2,284,530	0	0	10,934	141,917
Multifamily Family Housing	1		$325,550	$498,574	$33,607	$27,627	$194,743	$242,597			891	12,247
	2		$488,325	$747,861	$50,410	$41,440	$292,115	$363,896			1,337	18,371
	3		$651,100	$997,147	$67,213	$55,253	$389,487	$485,194			1,782	24,494
	4		$813,875	$1,246,434	$84,017	$69,066	$486,858	$606,493			2,228	30,618
	5		$976,650	$1,495,721	$100,820	$82,880	$584,230	$727,792			2,674	36,742
Program Total		1.9	$2,587,672	$4,985,737	$336,067	$276,266	$1,947,433	$2,425,972	0	0	8,912	122,472
Small Commercial & Industrial		2.1	$18,278,973	$38,710,455	$5,244,950	$4,733,944	$17,511,558	$11,220,004	0	0	74,458	1,287,916

Table 7C: TRC Benefits Table—Large Commercial & Industrial

Large Commercial & Industrial			**TRC Costs and Benefits by Program Year**									
Program	**Program Year**	**TRC**	**Total Discounted Lifetime Costs**	**Total Discounted Lifetime Benefits**	**Capacity**		**Energy**		**DR Load Reductions (kW)**		**MWh Saved**	
					Generation	**Tans/Dist**	**Peak**	**Off Peak**	**Annual**	**Lifetime**	**Annual**	**Lifetime**
Commercial Efficiency	1		$3,798,387	$6,033,123	$585,939	$463,724	$3,368,895	$1,614,565			10,115	148,485
	2		$3,798,387	$6,033,123	$585,939	$463,724	$3,368,895	$1,614,565			10,115	148,485
	3		$3,798,387	$6,033,123	$585,939	$463,724	$3,368,895	$1,614,565			10,115	148,485
	4		$3,798,387	$6,033,123	$585,939	$463,724	$3,368,895	$1,614,565			10,115	148,485
	5		$3,798,387	$6,033,123	$585,939	$463,724	$3,368,895	$1,614,565			10,115	148,485
Program Total		1.9	$15,615,927	$30,165,616	$2,929,694	$2,318,620	$16,844,477	$8,072,825	0	0	50,575	742,423
Large Nonresidential Upstream Lighting	1		$463,417	$794,470	$153,113	$148,582	$328,313	$164,462			2,348	35,225
	2		$1,390,250	$2,383,410	$459,338	$445,746	$984,940	$493,386			7,045	105,675
	3		$1,853,667	$3,177,880	$612,450	$594,328	$1,313,254	$657,848			9,393	140,900
	4		$2,780,500	$4,766,820	$918,676	$891,491	$1,969,881	$986,772			14,090	211,351
	5		$2,780,500	$4,766,820	$918,676	$891,491	$1,969,881	$986,772			14,090	211,351
Program Total		2.2	$7,288,397	$15,889,399	$3,062,252	$2,971,638	$6,566,269	$3,289,240	0	0	46,967	704,502
Industrial Efficiency	1		$6,310,317	$10,022,916	$1,036,521	$846,283	$5,428,110	$2,712,003			16,804	172,541
	2		$6,310,317	$10,022,916	$1,036,521	$846,283	$5,428,110	$2,712,003			16,804	172,541
	3		$6,310,317	$10,022,916	$1,036,521	$846,283	$5,428,110	$2,712,003			16,804	172,541
	4		$6,310,317	$10,022,916	$1,036,521	$846,283	$5,428,110	$2,712,003			16,804	172,541
	5		$6,310,317	$10,022,916	$1,036,521	$846,283	$5,428,110	$2,712,003			16,804	172,541
Program Total		1.9	$25,942,970	$50,114,582	$5,182,603	$4,231,415	$27,140,549	$13,560,017	0	0	84,021	862,707
Large Curtailable Demand Response	1		$1,447,709	$0	$0	$0	$0	$0			0	0
	2		$1,447,709	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
	3		$1,447,709	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
	4		$1,447,709	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
	5		$1,447,709	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
Program Total		2.3	$5,951,821	$13,705,795	$7,678,639	$6,027,156	$0	$0	41,895	41,895	0	0
Large Commercial & Industrial		2.0	$54,799,115	$109,875,392	$18,853,187	$15,548,829	$50,551,295	$24,922,081	$41,895	$41,895	181,564	2,309,633

Table 7D & 7E: TRC Benefits Table—Governmental/Educational/Non-Profit & Total All Programs

Governmental/Educational/Nonprofit			**TRC Costs and Benefits by Program Year**									
Program	**Program Year**	**TRC**	**Total Discounted Lifetime Costs**	**Total Discounted Lifetime Benefits**	**Capacity**		**Energy**		**DR Load Reductions (kW)**		**MWh Saved**	
					Generation	**Tans/Dist**	**Peak**	**Off Peak**	**Annual**	**Lifetime**	**Annual**	**Lifetime**
Governmental / Educational / Nonprofit Sectors	1		$1,756,387	$2,789,737	$318,042	$271,085	$1,431,854	$768,755			4,677	57,421
	2		$4,390,968	$6,974,342	$795,105	$677,713	$3,579,635	$1,921,888			11,693	143,552
	3		$4,390,968	$6,974,342	$795,105	$677,713	$3,579,635	$1,921,888			11,693	143,552
	4		$4,390,968	$6,974,342	$795,105	$677,713	$3,579,635	$1,921,888			11,693	143,552
	5		$2,634,581	$4,184,605	$477,063	$406,628	$2,147,781	$1,153,133			7,016	86,131
Program Total		1.9	$14,329,469	$27,897,368	$3,180,422	$2,710,854	$14,318,539	$7,687,553	0	0	46,772	574,210
Community Education	1		$254,607	$260,569	$24,984	$20,921	$140,862	$73,802			4,295	54,823
	2		$763,821	$781,707	$74,951	$62,764	$422,586	$221,406			12,884	164,468
	3		$1,018,428	$1,042,277	$99,935	$83,686	$563,448	$295,208			17,179	219,291
	4		$1,527,642	$1,563,415	$149,902	$125,528	$845,172	$442,813			25,768	328,936
	5		$1,527,642	$1,563,415	$149,902	$125,528	$845,172	$442,813			25,768	328,936
Program Total		1.3	$4,004,337	$5,211,383	$499,675	$418,428	$2,817,238	$1,476,042	0	0	9,372	93,724
Governmental/Educational/Nonprofit		1.8	$18,333,806	$33,108,751	$3,680,097	$3,129,282	$17,135,777	$9,163,595	$0	$0	$56,145	$667,934

Total All Programs		1.9	$125,804,240	$233,962,676	$33,583,921	$28,232,231	$112,478,930	$59,667,594	$44,100	$44,100	$449,734	$5,580,468

Table 8A: Net TRC Benefits Table—Residential

Residential		TRC Costs and Benefits by Program Year											
Program	Assumed (Y6) NTG	Program Year	TRC	Total Discounted Net Lifetime Costs	Total Discounted Net Lifetime Benefits	Capacity		Energy		DR Load Reductions (kW)		MWh Saved	
						Generation	Tans/Dist	Peak	Off Peak	Annual	Lifetime	Annual	Lifetime
Residential Efficiency	69.3%	1		$8,941,963	$11,406,560	$1,338,633	$1,109,247	$5,949,201	$3,009,479			23,810	303,937
		2		$6,706,472	$8,554,920	$1,003,975	$831,935	$4,461,900	$2,257,109			17,858	227,953
		3		$3,353,236	$4,277,460	$501,987	$415,967	$2,230,950	$1,128,555			8,929	113,976
		4		$2,235,491	$2,851,640	$334,658	$277,312	$1,487,300	$752,370			5,953	75,984
		5		$1,117,745	$1,425,820	$167,329	$138,656	$743,650	$376,185			2,976	37,992
Program Total			1.5	$19,490,885	$28,516,400	$3,346,583	$2,773,117	$14,873,002	$7,523,698	0	0	59,525	759,843
Direct Load Control	100.0%	1		$146,188									
		2		$283,062	$180,339	$101,035	$79,305			2,205	2,205		
		3		$283,062	$180,339	$101,035	$79,305			2,205	2,205		
		4		$283,062	$180,339	$101,035	$79,305			2,205	2,205		
		5		$283,062	$180,339	$101,035	$79,305			2,205	2,205		
Program Total			0.7	$1,035,684	$721,358	$404,139	$317,219	$0	$0	2,205	2,205	0	0
Appliance Recycling	64.7%	1		$145,771	$218,360	$23,239	$19,764	$104,195	$71,162			571	4,903
		2		$291,542	$436,719	$46,477	$39,529	$208,389	$142,324			1,141	9,806
		3		$291,542	$436,719	$46,477	$39,529	$208,389	$142,324			1,141	9,806
		4		$364,427	$545,899	$58,096	$49,411	$260,487	$177,905			1,427	12,258
		5		$364,427	$545,899	$58,096	$49,411	$260,487	$177,905			1,427	12,258
Program Total			1.9	$1,170,247	$2,183,596	$232,386	$197,644	$1,041,946	$711,620	0	0	5,707	49,032
Home Energy Reports	100.0%	1		$272,159	$300,441	$0	$0	$182,742	$117,699			2,415	7,244
		2		$408,238	$450,661	$0	$0	$274,113	$176,548			3,622	10,866
		3		$680,397	$751,102	$0	$0	$456,856	$294,247			6,037	18,110
		4		$680,397	$751,102	$0	$0	$456,856	$294,247			6,037	18,110
		5		$680,397	$751,102	$0	$0	$456,856	$294,247			6,037	18,110
Program Total			1.4	$2,177,202	$3,004,409	$0	$0	$1,827,423	$1,176,986	0	0	24,146	72,438
Whole House Audit / Retrofit	84.1%	1		$29,927	$28,475	$2,365	$2,220	$16,823	$7,067			74	344
		2		$89,782	$85,426	$7,095	$6,661	$50,469	$21,200			221	1,032
		3		$119,710	$113,901	$9,461	$8,881	$67,292	$28,267			295	1,376
		4		$179,565	$170,851	$14,191	$13,322	$100,938	$42,400			442	2,064
		5		$179,565	$170,851	$14,191	$13,322	$100,938	$42,400			442	2,064
Program Total			1.2	$470,685	$569,503	$47,303	$44,406	$336,460	$141,334	0	0	1,473	6,879
Savings by Design	100.0%	1		$69,455	$14,077	$1,725	$1,403	$7,264	$3,685			20	307
		2		$208,364	$42,230	$5,176	$4,208	$21,792	$11,055			61	920
		3		$277,818	$56,307	$6,901	$5,611	$29,056	$14,740			82	1,227
		4		$416,728	$84,461	$10,351	$8,416	$43,583	$22,110			123	1,841
		5		$416,728	$84,461	$10,351	$8,416	$43,583	$22,110			123	1,841
Program Total			0.3	$1,092,349	$281,535	$34,504	$28,055	$145,278	$73,699	0	0	409	6,135
Low Income Efficiency	76.6%	1		$379,624	$216,816	$8,689	$8,157	$130,052	$69,917			1,172	3,969
		2		$615,607	$351,593	$14,091	$13,228	$210,895	$113,379			1,901	6,436
		3		$923,410	$527,390	$21,136	$19,842	$316,343	$170,069			2,851	9,654
		4		$1,056,792	$603,569	$24,190	$22,708	$362,037	$194,635			3,263	11,048
		5		$1,128,612	$644,588	$25,833	$24,251	$386,641	$207,862			3,485	11,799
Program Total			0.7	$3,267,415	$2,343,956	$93,940	$88,186	$1,405,968	$755,863	0	0	12,673	42,906
Residential Total			1.3	$28,704,466	$37,620,758	$4,158,854	$3,448,625	$19,630,077	$10,383,201	2205	2205	103,933	937,232

Table 8B: Net TRC Benefits Table—Small Commercial & Industrial

Small Commercial & Industrial		**TRC Costs and Benefits by Program Year**											
Program	**Assumed (Y6) NTG**	**Program Year**	**TRC**	**Total Discounted Net Lifetime Costs**	**Total Discounted Net Lifetime Benefits**	**Capacity**		**Energy**		**DR Load Reductions (kW)**		**MWh Saved**	
						Generation	**Tans/Dist**	**Peak**	**Off Peak**	**Annual**	**Lifetime**	**Annual**	**Lifetime**
Express Efficiency (Assumes commercial rebates NTG from Y6)	52.0%	1		$1,553,641	$2,187,037	$305,336	$275,594	$1,070,689	$535,419			3,657	76,111
		2		$1,553,641	$2,187,037	$305,336	$275,594	$1,070,689	$535,419			3,657	76,111
		3		$1,553,641	$2,187,037	$305,336	$275,594	$1,070,689	$535,419			3,657	76,111
		4		$1,553,641	$2,187,037	$305,336	$275,594	$1,070,689	$535,419			3,657	76,111
		5		$1,553,641	$2,187,037	$305,336	$275,594	$1,070,689	$535,419			3,657	76,111
Program Total			1.7	$6,387,326	$10,935,184	$1,526,678	$1,377,971	$5,353,443	$2,677,093	0	0	18,283	380,553
Small Nonresidential Upstream Lighting	100.0%	1		$192,052	$329,250	$63,454	$61,576	$136,062	$68,158			973	14,598
		2		$576,157	$987,750	$190,362	$184,729	$408,186	$204,473			2,920	43,795
		3		$768,210	$1,317,000	$253,816	$246,306	$544,248	$272,630			3,893	58,393
		4		$1,152,315	$1,975,499	$380,724	$369,458	$816,372	$408,945			5,839	87,589
		5		$1,152,315	$1,975,499	$380,724	$369,458	$816,372	$408,945			5,839	87,589
Program Total			2.2	$3,020,510	$6,584,998	$1,269,080	$1,231,528	$2,721,240	$1,363,150	0	0	19,464	291,965
Small Commercial Direct-Install	99.3%	1		$211,421	$303,766	$35,001	$28,657	$126,684	$113,424			543	7,046
		2		$634,262	$911,297	$105,003	$85,970	$380,053	$340,272			1,629	21,138
		3		$845,683	$1,215,063	$140,004	$114,626	$506,737	$453,696			2,171	28,184
		4		$1,268,524	$1,822,595	$210,005	$171,940	$760,106	$680,544			3,257	42,276
		5		$1,268,524	$1,822,595	$210,005	$171,940	$760,106	$680,544			3,257	42,276
Program Total			1.8	$3,325,124	$6,075,317	$700,018	$573,132	$2,533,686	$2,268,480	0	0	10,857	140,920
Multifamily Family Housing	94.6%	1		$325,550	$471,831	$31,804	$26,145	$184,297	$229,585			843	11,590
		2		$488,325	$707,746	$47,706	$39,217	$276,446	$344,377			1,265	17,385
		3		$651,100	$943,662	$63,608	$52,289	$368,595	$459,169			1,687	23,181
		4		$813,875	$1,179,577	$79,510	$65,362	$460,744	$573,961			2,108	28,976
		5		$976,650	$1,415,492	$95,412	$78,434	$552,892	$688,754			2,530	34,771
Program Total			1.8	$2,587,672	$4,718,308	$318,040	$261,447	$1,842,975	$2,295,846	0	0	8,434	115,903
Small Commercial & Industrial			1.8	$15,320,632	$28,313,807	$3,813,816	$3,444,078	$12,451,344	$8,604,570	0	0	57,039	929,341

Table 8C: Net TRC Benefits Table—Large Commercial & Industrial

Large Commercial & Industrial		TRC Costs and Benefits by Program Year											
Program	Assumed (Y6) NTG	Program Year	TRC	Total Discounted Net Lifetime Costs	Total Discounted Net Lifetime Benefits	Capacity		Energy		DR Load Reductions (kW)		MWh Saved	
						Generation	Tans/Dist	Peak	Off Peak	Annual	Lifetime	Annual	Lifetime
Commercial Efficiency	52.0%	1		$2,406,075	$3,138,385	$304,801	$241,226	$1,752,474	$839,885			5,262	77,241
		2		$2,406,075	$3,138,385	$304,801	$241,226	$1,752,474	$839,885			5,262	77,241
		3		$2,406,075	$3,138,385	$304,801	$241,226	$1,752,474	$839,885			5,262	77,241
		4		$2,406,075	$3,138,385	$304,801	$241,226	$1,752,474	$839,885			5,262	77,241
		5		$2,406,075	$3,138,385	$304,801	$241,226	$1,752,474	$839,885			5,262	77,241
Program Total			1.6	$9,891,853	$15,691,926	$1,524,005	$1,206,129	$8,762,370	$4,199,423	0	0	26,309	386,203
Large Nonresidential Upstream Lighting	100.0%	1		$463,417	$794,470	$153,113	$148,582	$328,313	$164,462			2,348	35,225
		2		$1,390,250	$2,383,410	$459,338	$445,746	$984,940	$493,386			7,045	105,675
		3		$1,853,667	$3,177,880	$612,450	$594,328	$1,313,254	$657,848			9,393	140,900
		4		$2,780,500	$4,766,820	$918,676	$891,491	$1,969,881	$986,772			14,090	211,351
		5		$2,780,500	$4,766,820	$918,676	$891,491	$1,969,881	$986,772			14,090	211,351
Program Total			2.2	$7,288,397	$15,889,399	$3,062,252	$2,971,638	$6,566,269	$3,289,240	0	0	46,967	704,502
Industrial Efficiency	78.0%	1		$5,249,735	$7,817,875	$808,486	$660,101	$4,233,926	$2,115,363			13,107	134,582
		2		$5,249,735	$7,817,875	$808,486	$660,101	$4,233,926	$2,115,363			13,107	134,582
		3		$5,249,735	$7,817,875	$808,486	$660,101	$4,233,926	$2,115,363			13,107	134,582
		4		$5,249,735	$7,817,875	$808,486	$660,101	$4,233,926	$2,115,363			13,107	134,582
		5		$5,249,735	$7,817,875	$808,486	$660,101	$4,233,926	$2,115,363			13,107	134,582
Program Total			1.8	$21,582,706	$39,089,374	$4,042,430	$3,300,503	$21,169,628	$10,576,813	0	0	65,537	672,912
Large Curtailable Demand Response	100.0%	1		$823,565	$0	$0	$0	$0	$0			0	0
		2		$1,603,745	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
		3		$1,603,745	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
		4		$1,603,745	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
		5		$1,603,745	$3,426,449	$1,919,660	$1,506,789	$0	$0	41,895	41,895	0	0
Program Total			2.3	$5,863,493	$13,705,795	$7,678,639	$6,027,156	$0	$0	41,895	41,895	0	0
Large Commercial & Industrial			1.9	$44,626,449	$84,376,494	$16,307,325	$13,505,426	$36,498,267	$18,065,475	$41,895	$41,895	138,812	1,763,617

Table 8D & 8E: Net TRC Benefits Table—Governmental/Educational/Non-Profit & Total All Programs

Governmental/Educational/Nonprofit		TRC Costs and Benefits by Program Year ($000)											
Program	Assumed (Y6) NTG	Program Year	TRC	Total Discounted Net Lifetime Costs	Total Discounted Net Lifetime Benefits	Capacity		Energy		DR Load Reductions (kW)		MWh Saved	
						Generation	Tans/Dist	Peak	Off Peak	Annual	Lifetime	Annual	Lifetime
Governmental / Educational / Nonprofit Sectors	52.0%	1		$1,112,577	$1,451,200	$165,443	$141,017	$744,840	$399,901			2,433	29,870
		2		$2,781,443	$3,628,000	$413,608	$352,541	$1,862,099	$999,752			6,083	74,675
		3		$2,781,443	$3,628,000	$413,608	$352,541	$1,862,099	$999,752			6,083	74,675
		4		$2,781,443	$3,628,000	$413,608	$352,541	$1,862,099	$999,752			6,083	74,675
		5		$1,668,866	$2,176,800	$248,165	$211,525	$1,117,259	$599,851			3,650	44,805
Program Total			1.6	$9,076,950	$14,512,001	$1,654,431	$1,410,166	$7,448,396	$3,999,007	0	0	24,331	298,700
Community Education	100.0%	1		$254,607	$260,569	$24,984	$20,921	$140,862	$73,802			2,976	37,992
		2		$763,821	$781,707	$74,951	$62,764	$422,586	$221,406			8,929	113,976
		3		$1,018,428	$1,042,277	$99,935	$83,686	$563,448	$295,208			11,905	151,969
		4		$1,527,642	$1,563,415	$149,902	$125,528	$845,172	$442,813			17,858	227,953
		5		$1,527,642	$1,563,415	$149,902	$125,528	$845,172	$442,813			17,858	227,953
Program Total			1.3	$4,004,337	$5,211,383	$499,675	$418,428	$2,817,238	$1,476,042	0	0	9,372	93,724
Governmental/Educational/Nonprofit			1.5	$13,081,287	$19,723,384	$2,154,106	$1,828,594	$10,265,634	$5,475,049	$0	$0	$33,703	$392,424

Total All Programs	**74.2%**		1.7	$101,732,835	$170,034,442	$26,434,102	$22,226,723	$78,845,322	$42,528,295	$44,100	$44,100	$333,488	$4,022,614

12. Gantt Charts of Program Schedule Summary

Chart 1: Gantt Chart of Program Schedule Summary (For Section 1.4)

Chart will be formatted to fit on one 8½ - 11 page

It will use color to differentiate schedule items

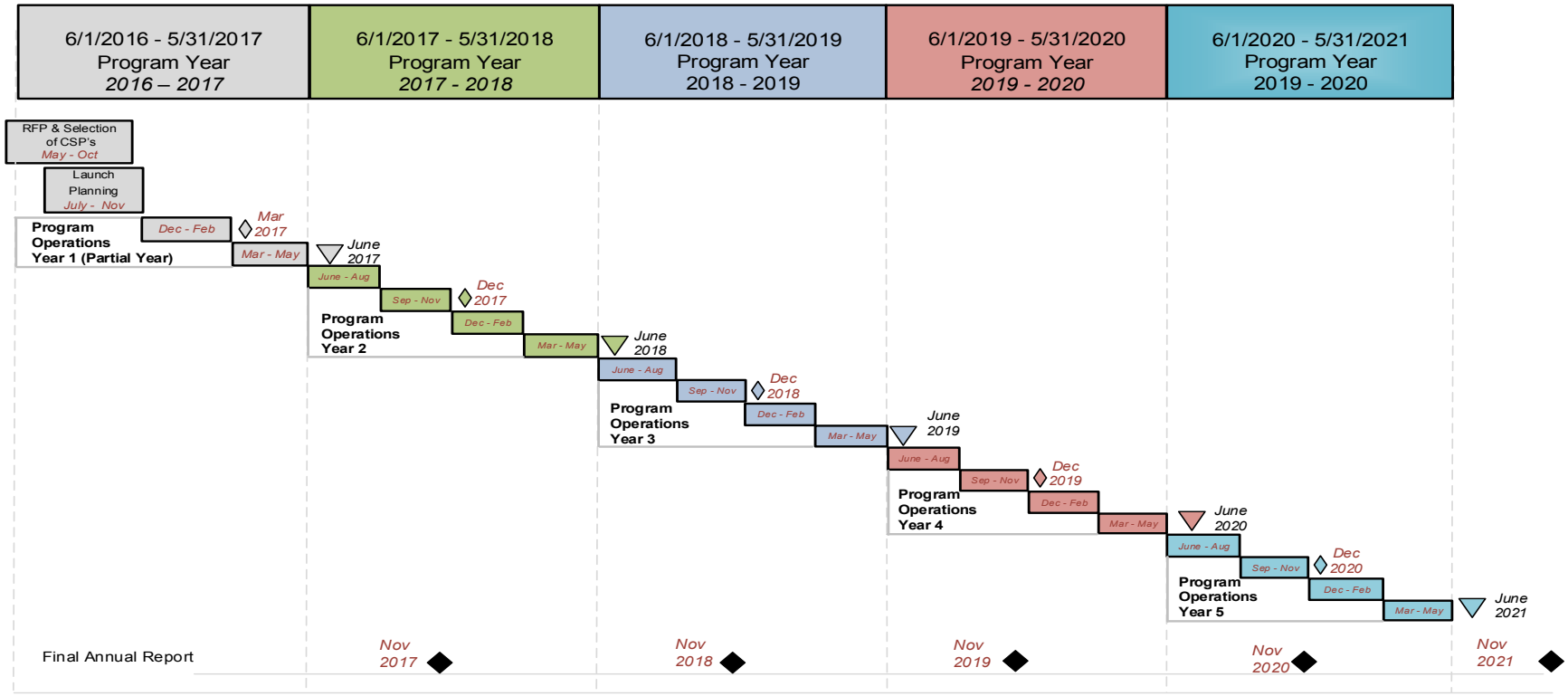
Provide a separate chart for each Portfolio that includes:

- Start and completion dates for the launch and close of Residential Portfolio programs for Program Years 2016, 2017, 2018, 2019 and 2020
- Start and completion dates for the launch and close of Commercial/Industrial Small portfolio programs for Program Years 2016, 2017, 2018, 2019 and 2020
- Start and completion dates for the launch and close of Commercial/Industrial Large portfolio programs for Program Years 2016, 2017, 2018, 2019 and 2020
- Start and completion dates for the launch and close of Governmental/Educational/Non-Profit Small portfolio programs for Program Years 2016, 2017, 2018, 2019 and 2020

As well, include the following for each chart:

- Start and completion dates for design of each Program Year
- Dates at which CSPs will be selected and placed under contract for each portfolio

Chart 1:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Residential Portfolio Programs

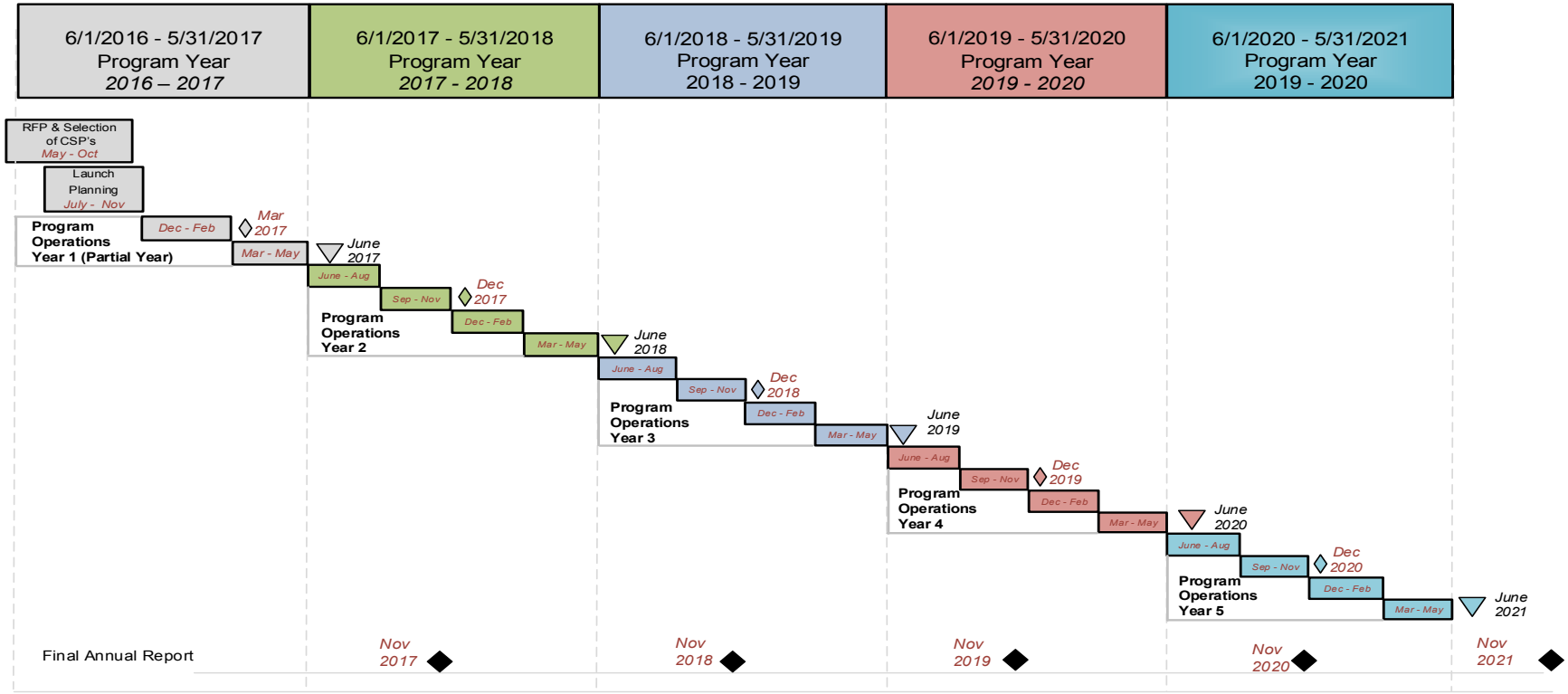


Assumptions:

Duquesne Light will file the Act 129 Phase III EE&C Plan by November 30, 2015
PA PUC approval by March 2016
February 2016 CSP Agreements to be filed at PA PUC

Note: Program Year Ending May 31

Chart 2:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Small Commercial and Industrial Portfolio Programs

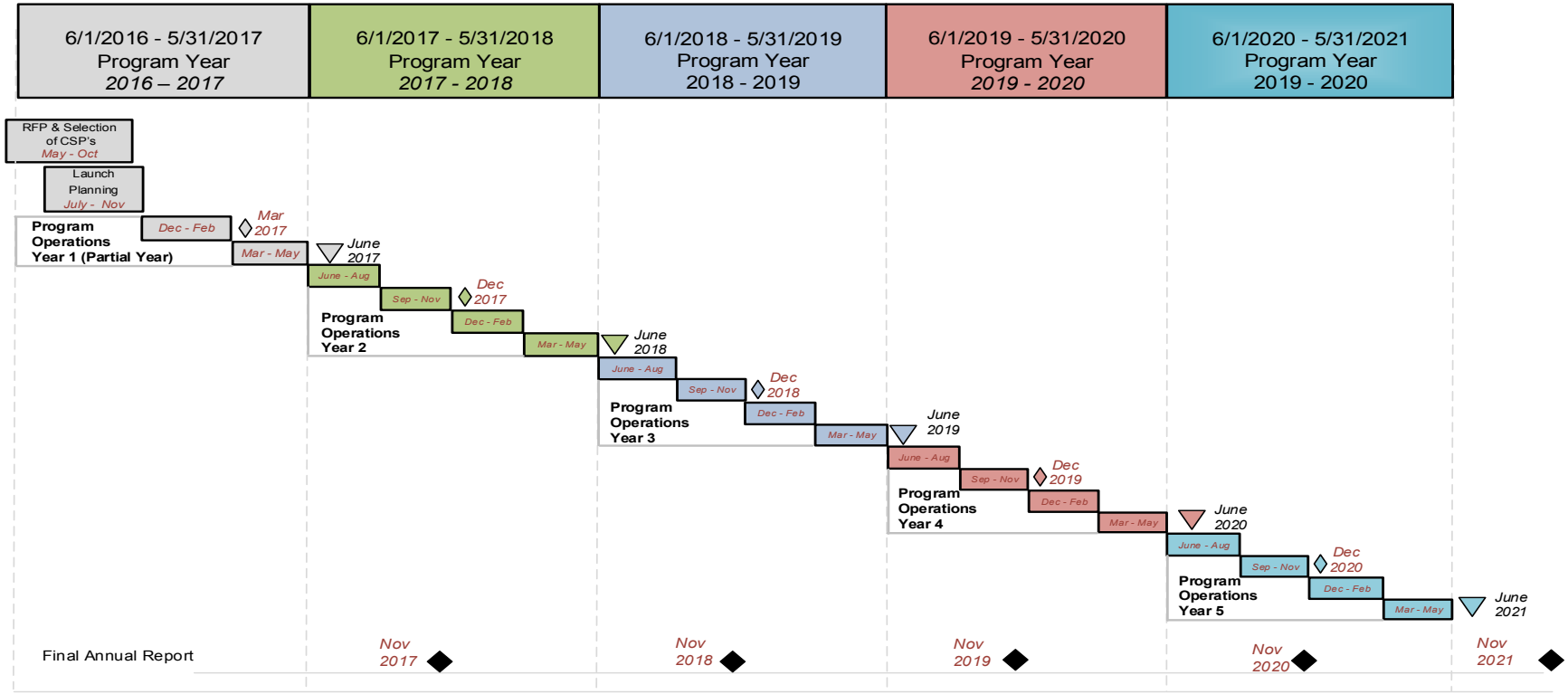


Assumptions:

Duquesne Light will file the Act 129 Phase III EE&C Plan by November 30, 2015
PA PUC approval by March 2016
February 2016 CSP Agreements to be filed at PA PUC

Note: Program Year Ending May 31

Chart 3:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Large Commercial and Industrial Portfolio Programs

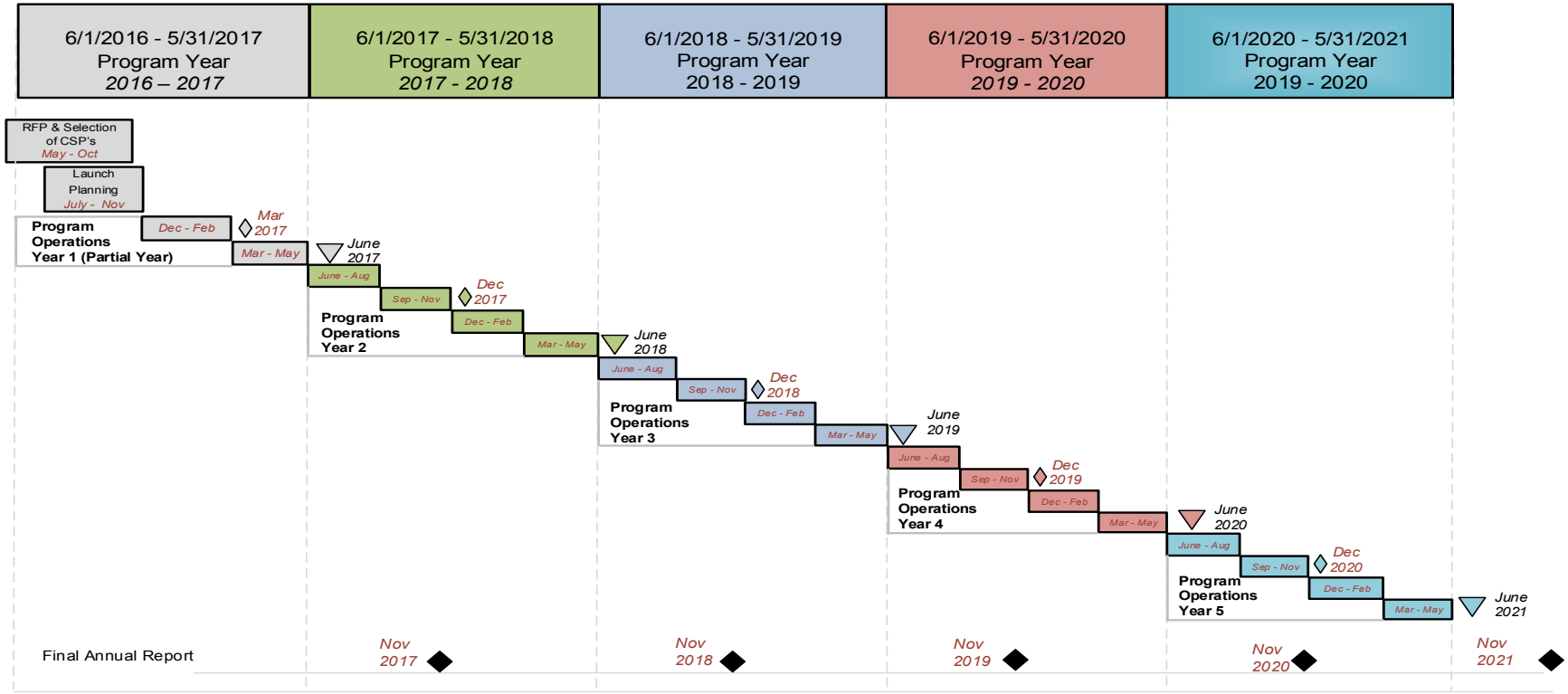


Assumptions:

Duquesne Light will file the Act 129 Phase III EE&C Plan by November 30, 2015
PA PUC approval by March 2016
February 2016 CSP Agreements to be filed at PA PUC

Note: Program Year Ending May 31

Chart 4:
Energy Efficiency and Conservation Plans
Gantt Chart of Program Schedule Summary
Government/Educational/Non-Profit Portfolio Programs



Assumptions:

Duquesne Light will file the Act 129 Phase III EE&C Plan by November 30, 2015
PA PUC approval by March 2016
February 2016 CSP Agreements to be filed at PA PUC

Note: Program Year Ending May 31