

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of :	Case No. 16-649-EL-POR
The Dayton Power and Light Company for :	Case No. 16-1369-EL-WVR
Approval of Its Energy Efficiency and Peak :	
Demand Reduction Program Portfolio Plan :	
for 2017 through 2019 :	

**APPLICATION OF THE DAYTON POWER AND LIGHT COMPANY
FOR APPROVAL OF ITS ENERGY EFFICIENCY AND PEAK REDUCTION
PROGRAM PORTFOLIO PLAN**

The Dayton Power and Light Company (“DP&L” or “the Company”) hereby submits this Application seeking authority to implement all or part of the attached 2017-2019 energy efficiency and peak demand reduction program portfolio plan (“Program Portfolio”), pursuant to Ohio Administrative Code (“O.A.C”) §4901:1-39-04.

I. OVERVIEW OF APPLICATION

1. DP&L is a public utility and electric light company as defined by Ohio Revised Code (“R.C.”) §4905.02 and §4905.03(C), respectively, and an electric distribution utility (“EDU”) as defined by R.C. §4928.01(A)(6).

2. R.C. §4928.66(A)(1)(a) required an EDU, starting in 2009, to “implement energy efficiency programs that achieve energy savings equivalent to at least three-tenths of one percent of the total annual average, and normalized kilowatt-hour sales of the electric distribution utility during the preceding three calendar years to customers in this state.” For the plan period, the savings requirement increases “for years 2017, 2018, 2019, and 2020, one per cent of the baseline.” In addition, R.C. §4928.66(A)(1)(b) requires an EDU to “implement peak demand reduction programs designed to achieve a one per cent reduction in peak demand in 2009” and

“(i)n 2017 and each year thereafter through 2020, the utility shall achieve an additional seventy-five hundredths of one per cent reduction in peak demand.”

II. BACKGROUND AND HISTORY

3. O.A.C. §4901:1-39-04 required an electric utility to propose its first Program Portfolio by January 1, 2010. DP&L’s first Program Portfolio for 2010 through 2012, as approved by the Commission by Opinion and Order dated June 24, 2009 in Case No. 08-1094-EL-SSO, was filed pursuant to O.A.C §4901:1-39-04 in Case No. 09-1986-EL-POR on December 23, 2009, and was supplemented by its Notice of Filing Supplement to Application filed and docketed on July 15, 2010 and July 16, 2010. DP&L’s first Program Portfolio was ultimately approved by the Commission by Opinion and Order dated April 27, 2011.

4. On April 15, 2013, DP&L filed its second Program Portfolio for 2013 through 2015 in Case No. 13-833-EL-POR, *et al.* The Commission approved the Stipulation and Recommendation filed by DP&L on December 4, 2013.¹ The second approved Program Portfolio was to last through plan year 2015; however, with the signing of Senate Bill (S.B.) 310 on June 13, 2014, DP&L was presented with the option to either continue its then current Program Portfolio through 2016 with no amendments, or file a new Program Portfolio.² DP&L chose to continue its then current Program Portfolio, as approved by the Commission on December 4, 2013. DP&L’s energy efficiency programs have been exceedingly successful and DP&L is currently five (5) years ahead of the cumulative energy efficiency and peak demand benchmarks, as set forth in R.C. §4928.66(A)(1)(a) and R.C. §4928.66(A)(1)(b). Therefore, DP&L is requesting that the Commission approve a total Program Portfolio spend of up to the amount included in this filing, with no minimum spend requirement.

¹ Commission Opinion and Order dated December 4, 2013, in Case No. 13-833-EL-POR, *et al.*

² See S.B. 310, Section 6 (D).

5. DP&L has calculated its energy efficiency savings and peak demand reduction benchmarks in accordance with the requirements of R.C. §4928.66.³ The proposed programs within DP&L's 2017-2019 Program Portfolio provide significant opportunities for energy and cost savings for virtually all of DP&L's customers, while creating lasting economic and societal benefits to both DP&L's customers and the State of Ohio.

III. OVERVIEW OF POTENTIAL PROGRAM PORTFOLIO PLAN

6. DP&L's 2017-2019 Program Portfolio, attached as Exhibit 1, which satisfies the requirements of O.A.C. §4901:1-39-04(A), provides detail as to DP&L's proposed energy efficiency and peak demand reduction programs for which DP&L seeks Commission authorization to implement. This updated Program Portfolio seeks to build on the success of the current programs while exploring new ways to help customers save through a continuation of the previous plan's approved Pilot Program, and through the offering of additional programs as mentioned below. Like DP&L's existing plan, this Program Portfolio includes a portfolio of energy efficiency programs which pass the Total Resource Cost test on a portfolio basis.

7. Also attached, as Exhibit 2, is a Market Potential Study, as required by O.A.C. §4901:1-39-03(A), developed by The Cadmus Group, Inc.

8. DP&L requests that the Commission authorize implementation of the following residential programs, at DP&L's discretion, some of which represent a continuation of programs currently being implemented, with the bottom four (4) representing new offerings:

- a. Efficient Products (previously Residential Lighting);
- b. HVAC Equipment (previously Residential HVAC Rebates);
- c. Appliance Recycling;

³ See *In the Matter of the Dayton Power and Light Company's Portfolio Status Report*, Case Nos. 10-0303-EL-POR, 11-1276-EL-POR, 12-1420-EL-POR, 13-140-EL-POR, 14-738-EL-POR, 15-777-EL-POR, and 16-851-EL-POR.

- d. Income Eligible Efficiency (previously Low Income Affordability);
- e. School Education;
- f. Home Audit;
- g. Behavior Change;
- h. Energy Savings Kits; and
- i. Multi-Family Direct Install.

9. DP&L requests that the Commission authorize implementation of the following non-residential programs, at DP&L's discretion, some of which represent a continuation of programs currently being implemented, with the bottom three (3) representing new offerings:

- a. Rapid Rebates (Prescriptive Rebates);
- b. Custom Rebates;
- c. Mercantile Self-Direct Rebates;
- d. Commercial Midstream Program;
- e. Small Business Direct Install; and
- f. Combined Heat & Power (CHP).

10. DP&L also requests that the Commission authorize implementation of the following Cross Sector Programs, at DP&L's discretion:

- a. Customer Education;
- b. Pilot Program; and
- c. Non-Programmatic Savings.

It should be noted that the Non-Programmatic Savings program is new to this Program Portfolio. Further, if during the time period of the proposed Program Portfolio, DP&L institutes Transmission and Distribution Infrastructure Improvements and Smart Grid programs, DP&L is

requesting authority to count the savings generated by these initiatives pursuant to R.C. §4928.66(A)(2)(d)(i)(IV) and (II), respectively. The aforementioned Revised Code provisions permit utilities to count energy efficiency savings generated by transmission and distribution infrastructure improvements that reduce line losses and Smart Grid investment programs, provided that such programs are demonstrated to be cost-beneficial toward compliance benchmarks.

IV. SHARED SAVINGS

11. DP&L is also requesting approval of a Shared Savings mechanism that provides an after-tax net benefit of 85% to DP&L's customers and 15% to DP&L, based on the Utility Cost Test (UCT), when DP&L exceeds its cumulative energy efficiency requirements (kWh) for the current year.

12. DP&L will be eligible for shared savings if it exceeds the cumulative benchmarks of R.C. §4928.66 (A)(1)(a) and (A)(1)(b) for the current year.

13. For utility shared savings purposes, total gross, annualized savings will be used in the shared savings calculation. The following programs will not be included in the calculation of the shared savings incentive: Mercantile Self-Direct, Residential Low Income Affordability, Pilot Program, and Transmission and Distribution Infrastructure Improvements.

14. DP&L understands that it may only count savings for shared savings one-time (meaning there is no double counting of shared savings), and only in the year in which the savings were generated. In a year in which previous years' over-compliance is used to comply with the benchmarks, shared savings shall be based only on impacts generated in the current year.

15. DP&L may only count savings for compliance one time (meaning there is no double counting for compliance) during the plan timeframe of 2017-2019, but reserves the option of either counting any portion of over-compliance in the year of compliance, or banking any portion of over-compliance for use in connection with a subsequent year. To reduce the cost of compliance for a future Program Portfolio, any over-compliance achieved may be carried over to the next plan.

V. DISTRIBUTION DECOUPLING

16. DP&L is requesting approval of distribution decoupling costs pursuant to R.C. §4928.66 (D), which states:

(D) The commission may establish rules regarding the content of an application by an electric distribution utility for commission approval of a revenue decoupling mechanism under this division. Such an application shall not be considered an application to increase rates and may be included as part of a proposal to establish, continue, or expand energy efficiency or conservation programs. The commission by order may approve an application under this division if it determines both that the revenue decoupling mechanism provides for the recovery of revenue that otherwise may be forgone by the utility as a result of or in connection with the implementation by the electric distribution utility of any energy efficiency or energy conservation programs and reasonably aligns the interests of the utility and of its customers in favor of those programs.

17. These distribution decoupling costs are to be recovered through DP&L's Distribution Decoupling Rider (revenue decoupling mechanism), proposed in DP&L's current Electric Security Plan filing in Case No. 16-395-EL-SSO, *et al.*⁴ The Distribution Decoupling Rider will be updated annually at the same time and in the same manner as the Energy Efficiency Rider ("EER"), explained below in 20 and 21.

⁴ Application of the Dayton Power and Light for Approval of Its Electric Security Plan, Volume 8, dated February 22, 2016.

18. The distribution decoupling costs will be based on DP&L's base distribution revenue, excluding customer charge.

VI. COST RECOVERY

19. Pursuant to R.C. §4928.66 and O.A.C. §4901:1-39-07, DP&L is authorized to recover the costs of its Program Portfolio to the extent it is implemented. The structure and function of DP&L's existing cost recovery mechanism, the EER, has been approved by the Commission in DP&L's first ESP Case, Case No. 08-1094-EL-SSO. Since DP&L's proposed 2017-2019 Program Portfolio is substantially unchanged from that which has been implemented since 2009, to the extent the plan is implemented, the EER will continue in substantially the same form, except for two (2) modifications: (1) DP&L will no longer include distribution decoupling based on the above section. These costs can be recovered through a separate rider moving forward, the Distribution Decoupling Rider, unless the Commission does not approve such a rider. In the case that the Distribution Decoupling Rider is not approved by the Commission, DP&L is seeking authority to continue recovering distribution decoupling costs in the EER. (2) DP&L will modify the rate design of the non-residential portion of the EER so that costs for the programs are allocated 100% based on each class's share of base distribution revenue. Finally, to the extent DP&L institutes transmission and distribution infrastructure improvements or Smart Grid, the costs associated with those projects will not be included for recovery through the EER.

20. To the extent the plan is implemented, DP&L will file its EER application annually pursuant to O.A.C. §4901:1-39-07(A).

21. To the extent the plan is implemented, DP&L will file its EER schedules, tariffs and application at the Commission within 90 days of the effective date of the tariffs. Tariffs will then be effective on the filed effective date subject to future Commission audits.

VII. WAIVER REQUESTS

22. O.A.C. §4901:1-39-05(C) requires EDUs to file an annual portfolio status report addressing the performance of all of its approved energy efficiency and peak-demand reduction programs by no later than March 15th of each year. As a provision of DP&L's last approved Program Portfolio Stipulation,⁵ the parties agreed to DP&L's request that the filing date to comply with the above code provision be May 15th of each year. The extended deadline provides for additional improvement of the accuracy of the data and the evaluation of program impacts as filed in the annual report, which will also further enable the progress toward statewide efficiency goals. Therefore, DP&L respectfully requests the requirements of O.A.C. §4901:1-39-05(C) be waived each year for the duration of this Program Portfolio, and that to the extent the plan is implemented, DP&L's annual portfolio status report filing deadline be extended by two (2) months, until May 15th.

VIII. CONCLUSION

23. Based upon this Application and the attached supporting materials, DP&L respectfully asks that the Commission issue an Opinion and Order that: (i) authorizes implementation of DP&L's 2017-2019 Program Portfolio, at DP&L's discretion, finding it to be just, reasonable, and consistent with statutory requirements and Commission directives; (ii) approves the requested waiver of O.A.C. §4901:1-39-05(C), so that the annual portfolio status report is due on May 15th of each year for the duration of the Program Portfolio; and (iii)

⁵ Commission Opinion and Order dated December 4, 2013 in Case No. 13-833-EL-POR, *et al.*

authorizes DP&L to recover all prudently incurred costs identified in the Program Portfolio, including approved shared savings, to the extent the plan is implemented, through DP&L's EER and Distribution Decoupling Rider, finding such costs to be just and reasonable.

24. Finally, DP&L is also seeking the authority to file a new or amended Program Portfolio if there are changes in legislation during the 2017-2019 Program Portfolio period.

Respectfully submitted,

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EXHIBIT 1

Dayton
Power
and Light

June 15

2016

2017-2019 Portfolio Plan

June 15, 2016



2017-2019 Portfolio Plan

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Executive Summary

In keeping with the energy efficiency goals of Ohio Senate Bill 221, DP&L launched a series of energy-efficiency programs in 2009 designed to help customers save energy and money.

DP&L believes these efforts to-date have been a success. From 2009 through 2015, DP&L's residential and business programs helped customers save 1,219,705 megawatt hours of energy,¹ or enough energy to power 101,641 homes for a year. In terms of compliance, DP&L has more than doubled its 2015 cumulative energy benchmark target.

This updated portfolio plan seeks to build on the success of the current programs and help customers save. Included in this plan is a review of the savings potential within the DP&L service area, cost-benefit analyses, implementation plans for a balanced portfolio of energy saving programs, and an overview of DP&L's evaluation, measurement and verification approach.

In developing this updated portfolio of energy efficiency programs, DP&L had the following goals:

- Comply with Ohio's energy efficiency benchmark targets as outlined in O.R.C. §4928.66(A)(1)(a) and O.R.C. §4928.66(A)(1)(b).
- Develop cost-effective programs that provide value to customers.
- Leverage current program successes and lessons learned since 2009.
- Equitably provide savings opportunities for all customer classes.
- Provide a variety of programs in which customers can participate.
- Deliver quality customer programs that promote customer satisfaction with energy efficiency.
- Promote general market transformation and education to promote energy efficiency.
- Capture savings opportunities that have been identified in the market potential study.
- Implement best practices of other successful energy efficiency programs.

¹ Actual benchmarks and results are filed in the 2015 Energy Efficiency and Demand Reduction/Response Portfolio Status Report, Case No. 16-0851-EL-POR.



- Partner with collaborative members and other utilities when possible to capture program efficiencies and reach various customer groups.

Historical Savings

Since 2013, DP&L has been implementing its programs as filed and approved in Case No. 13-0833-EL-POR. Current programs to-date are as follows:

Residential:

- Lighting
- HVAC Rebates
- Income Eligible Efficiency
- Appliance Recycling
- School Education
- Residential Pilot Programs

Business & Government:

- Prescriptive Rebates
- Mercantile
- Custom Rebates*
- Non-residential Pilot Programs

Cross Sector:

- Education, Awareness Building & Market Transformation**
- Pilot
- Transmission and Distribution Infrastructure Improvements

*DP&L's Custom Rebate program includes a business audit program; partnerships with Montgomery County on its DRG program and with the University of Dayton and Vectren Energy Delivery of Ohio (Vectren), the local gas distribution utility, for a targeted business audit and marketing program; and combined heat and power incentives

**Education, Awareness Building, and Market Transformation includes public education and marketing campaign activities.



Portfolio Planning Process

In developing this portfolio, DP&L undertook a comprehensive approach that considered its own experience delivering energy efficiency programs, an analysis of the potential savings within DP&L's service area, programs currently being implemented by other utilities and cost effectiveness results. The final step of the process was to develop implementation plans for each program that includes a budget, projected savings and a timeline.

During the planning process, DP&L also took into account the program design criteria consistent with O.R.C. §4901: 1-39-03, which include the following:

- Benefits to customer classes and potential for broad participation.
- Non-energy benefits.
- Relative advantages and disadvantages of programs.
- Bundling measures for cost effectiveness.
- Addressing market barriers and market transformation.
- Magnitude of energy and demand savings.
- Equity among customer classes.
- Integration with other utility programs.
- Engaging supply chain and leveraging partners.

DP&L has engaged its stakeholder groups since it launched programs in 2009. Two of DP&L's program implementers are collaborative members: Ohio Partners for Affordable Energy and People Working Cooperatively. DP&L has also worked directly with collaborative members, such as the Ohio Hospital Association and the Ohio Manufacturers' Association, to market energy efficiency and DP&L's programs to their members. In addition, DP&L worked with the Ohio Environmental Council to organize a combined heat and power workshop for customers.

With regard to the portfolio plan, the energy efficiency collaborative stakeholder group is very familiar with DP&L's current and continuing suite of programs. Since the programs began in 2009, the collaborative has met quarterly and is provided with a program update at each meeting. Additional meeting topics include bidding energy efficiency into PJM, other utility programs and their potential value, the benefits of combined heat and power, and pilot programming.

Summary of 2017 to 2019 Plan

Presented below in Table 1 is a summary of the program energy and demand savings for the 2017-2019 portfolio plan. It should be noted that savings values have not been calculated for the pilot program, T&D infrastructure programs, naturally occurring savings or savings associated with potential Smart Grid initiatives. Savings for these



programs will be calculated through evaluation, measurement and verification activities and submitted with the annual portfolio status reports.

Programs	Energy (MWh) Savings				Demand (MW) Savings			
Residential Programs	2017	2018	2019	3-Year Total	2017	2018	2019	3-Year Total
Efficient Products	44,640	45,701	45,824	136,165	5.1	5.2	5.3	15.6
HVAC Equipment	7,562	7,562	7,562	22,686	1.4	1.4	1.4	4.2
Appliance Recycling	2,587	2,587	2,587	7,761	0.4	0.4	0.4	1.2
Income Eligible Efficiency	1,444	1,516	1,592	4,552	0.1	0.2	0.2	0.5
School Education	3,802	3,802	3,802	11,406	0.8	0.8	0.8	2.4
Home Audit	1,371	1,646	1,975	4,992	0.1	0.2	0.2	0.5
Behavior Change	10,300	17,900	20,500	48,700	2.1	2.6	2.9	7.6
Energy Savings Kits	2,755	2,755	2,755	8,265	1.8	1.8	1.8	5.4
Multi-Family Direct Install	3,379	3,412	3,446	10,237	0.3	0.3	0.3	0.9
Residential Total	77,840	86,881	90,043	254,764	12.1	12.9	13.3	38.3
Business Programs	2017	2018	2019	3-Year Total	2017	2018	2019	3-Year Total
Prescriptive	54,168	54,438	54,711	163,317	8.4	8.4	8.5	25.3
Custom	17,217	18,444	18,508	54,169	2.9	3.1	3.2	9.2
Commercial Midstream	13,200	14,520	15,972	43,692	2.5	2.8	3.0	8.3
Small Business Direct Install	5,000	5,500	6,050	16,550	1.3	1.4	1.5	4.2
Combined Heat and Power	6,000	7,500	9,000	22,500	0.8	1.0	1.2	3.0
Mercantile Self-Direct	8,822	7,940	7,146	23,908	1.0	0.9	0.8	2.7
Business Total	104,407	108,342	111,387	324,136	16.9	17.6	18.2	52.7
Cross-Sector Programs	2017	2018	2019	3-Year Total	2017	2018	2019	3-Year Total
Customer Education	-	-	-	-	-	-	-	-
Pilot Program	-	-	-	-	-	-	-	-
Smart Grid	-	-	-	-	-	-	-	-
Non-Programmatic Savings	-	-	-	-	-	-	-	-
T&D Infrastructure Improvement	-	-	-	-	-	-	-	-
Cross-Sector Total	-	-	-	-	-	-	-	-
Other	2017	2018	2019	3-Year Total	2017	2018	2019	3-Year Total
Evaluations, Measurement & Verification	-	-	-	-	-	-	-	-
Other Total	-	-	-	-	-	-	-	-
PLAN TOTAL	182,247	195,223	201,429	578,900	29.0	30.5	31.5	91.0

Table 1 Energy (MWh) and Demand (MW) Savings for 2017-2019 Plan

Presented below in Table 2 is a summary of the program costs for the 2017-2019 portfolio plan. Costs include incentives, implementation vendor charges and DP&L administrative costs. Implementation vendors for current and new programs will be selected through a request for proposal (RFP) process.



Programs	Program Costs			
	2017	2018	2019	3-Year Total
Residential Programs				
Efficient Products	\$ 5,345,485	\$ 5,115,244	\$ 4,937,540	\$ 15,398,269
HVAC Equipment	\$ 1,654,750	\$ 1,672,071	\$ 1,684,761	\$ 5,011,582
Appliance Recycling	\$ 773,874	\$ 786,490	\$ 799,625	\$ 2,359,989
Income Eligible Efficiency	\$ 1,311,376	\$ 1,376,085	\$ 1,444,003	\$ 4,131,464
School Education	\$ 392,880	\$ 400,657	\$ 408,805	\$ 1,202,342
Home Audit	\$ 848,586	\$ 897,319	\$ 952,828	\$ 2,698,733
Behavior Change	\$ 1,429,696	\$ 1,371,337	\$ 1,363,027	\$ 4,164,060
Energy Savings Kits	\$ 962,239	\$ 986,933	\$ 1,013,779	\$ 2,962,951
Multi-Family Direct Install	\$ 873,883	\$ 885,964	\$ 898,272	\$ 2,658,119
Residential Total	\$ 13,592,769	\$ 13,492,100	\$ 13,502,640	\$ 40,587,509
Business Programs				
Prescriptive	\$ 5,592,164	\$ 5,845,725	\$ 6,111,182	\$ 17,549,071
Custom	\$ 3,029,687	\$ 3,242,462	\$ 3,378,700	\$ 9,650,849
Commercial Midstream	\$ 1,034,058	\$ 1,155,994	\$ 1,293,308	\$ 3,483,360
Small Business Direct Install	\$ 1,359,213	\$ 1,537,752	\$ 1,689,962	\$ 4,586,927
Combined Heat and Power	\$ 511,095	\$ 606,728	\$ 702,380	\$ 1,820,203
Mercantile Self-Direct	\$ 750,316	\$ 677,328	\$ 618,610	\$ 2,046,254
Business Total	\$ 12,276,533	\$ 13,065,989	\$ 13,794,142	\$ 39,136,664
Cross-Sector Programs				
Customer Education	\$ 1,200,000	\$ 1,207,500	\$ 1,215,375	\$ 3,622,875
Pilot Program	\$ 1,293,465	\$ 1,327,904	\$ 1,364,839	\$ 3,986,208
Smart Grid	\$ -	\$ -	\$ -	\$ -
Non-Programmatic Savings	\$ 1,400,000	\$ 1,300,000	\$ 1,300,000	\$ 4,000,000
T&D Infrastructure Improvement	\$ -	\$ -	\$ -	\$ -
Cross-Sector Total	\$ 3,893,465	\$ 3,835,404	\$ 3,880,214	\$ 11,609,083
Other Costs				
Evaluations, Measurement & Verification	\$ 1,552,158	\$ 1,593,485	\$ 1,637,807	\$ 4,783,450
Other Costs Total	\$ 1,552,158	\$ 1,593,485	\$ 1,637,807	\$ 4,783,450
PORTFOLIO TOTAL	\$ 31,314,925	\$ 31,986,978	\$ 32,814,803	\$ 96,116,706

Table 2 Summary of Program Costs for 2017-2019 Plan

Compliance with Ohio Benchmark Targets

Based on the past performance of DP&L's current programs and the projected performance of the programs in this portfolio plan, DP&L projects that it will exceed the compliance benchmarks of O.R.C. §4928.66(A)(1)(a) and O.R.C. 4928.66(A)(1)(b). Presented below in Figures 1 and 2 are DP&L's projections for energy and demand compared to the benchmarks. Results from years 2009 through 2015 are actuals, as reported in DP&L's annual portfolio reports. Results from 2016 are estimates.



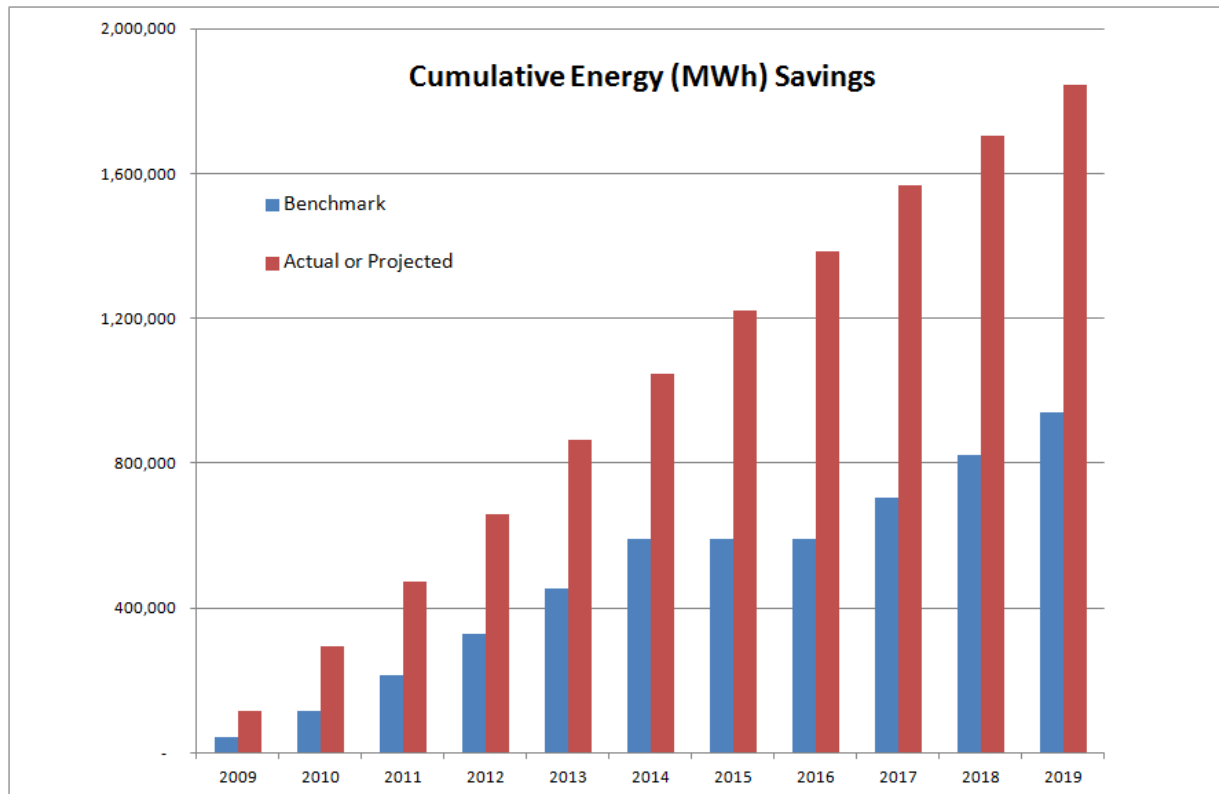


Figure 1 Cumulative Energy (MWh) Savings for 2017-2019 Plan

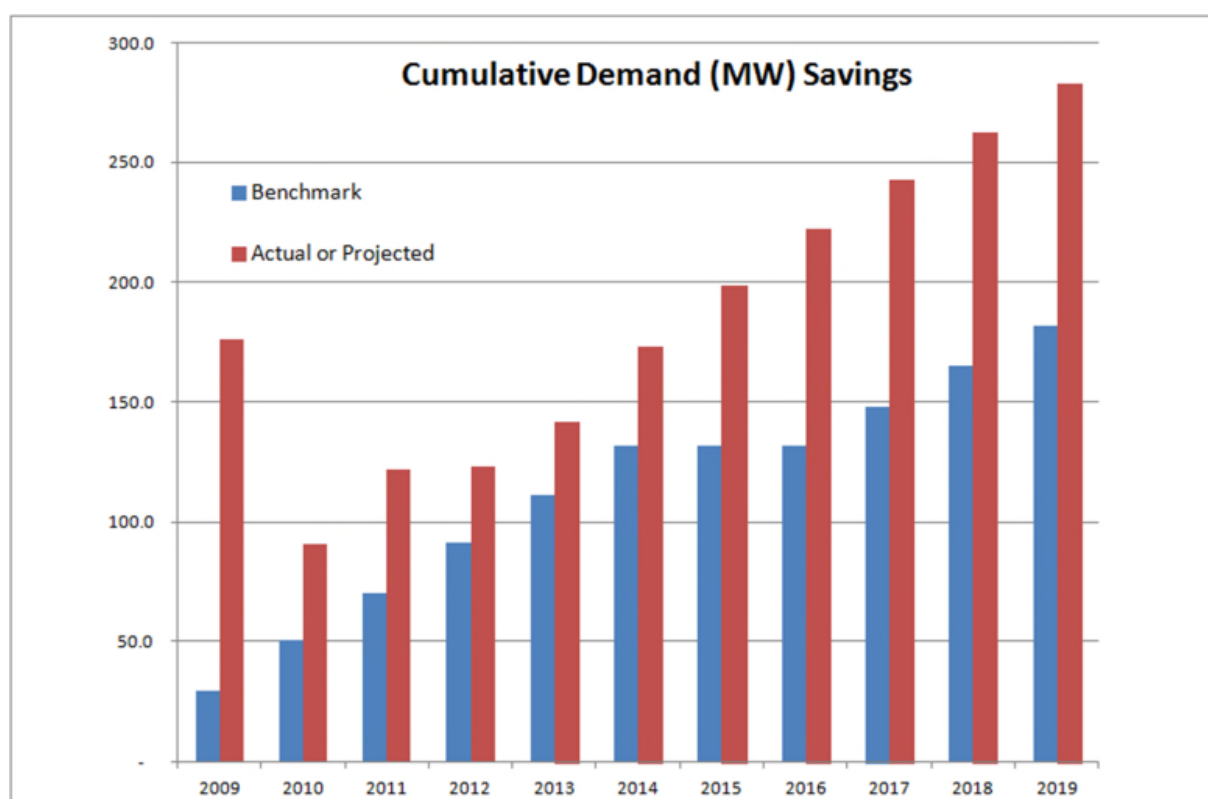


Figure 2 Cumulative Demand (MW) Savings for 2017-2019 Plan

Evaluations, Measurement & Verification

Effective evaluation, measurement and verification (EM&V) play an important role in a quality energy efficiency portfolio. EM&V activities ensure that reported savings are verified, energy and demand calculations are valid, program delivery is effective, customers are satisfied and the overall portfolio is cost-effective.

To date, DP&L's evaluation efforts, in conjunction with its independent evaluator, The Cadmus Group, have been received positively by the state's independent evaluator. In its review of the 2011 program year evaluations, the state's independent evaluator, Evergreen Economics, stated "we found that the Cadmus evaluation report adheres to industry best practices for evaluating DP&L's program offerings. The report is of high quality and provides the details necessary to substantiate the savings estimates provided. We have a high level of confidence in the evaluation research."² DP&L received similar comments in Evergreen's 2012 and 2013 program year evaluation reports. DP&L is pleased with this positive feedback and believes it is establishing a solid record of program implementation accompanied by an appropriate level of EM&V. Going forward, DP&L plans to follow the same EM&V process that resulted in the positive review by the independent statewide evaluator.

² PUCO Case No. 13-1027-EL-UNC, Evergreen Economics "Report of the Ohio Independent Evaluator," page 30.



Evaluation activities performed by DP&L's independent evaluator include impact evaluations, process evaluations, tracking system review, savings verifications and cost effectiveness calculations. In addition, when a state independent evaluator is appointed to evaluate the 2017-2019 program years, DP&L will coordinate EM&V activities with that party. This will include providing the state's evaluator with an annual evaluations plan for review, survey instruments, and notification of pending site visits. DP&L believes this cooperative approach improves the overall quality and effectiveness of evaluations and plans to continue to work with the statewide evaluator in the future.

Cost Effectiveness

In keeping with PUCO rules, DP&L used the Total Resource Cost Test (TRC) as the overall test of the portfolio's cost effectiveness and as a guide to determine the inclusion of programs in the portfolio. Overall, the portfolio is cost-effective as measured by the TRC. In addition, cost effectiveness calculations were performed for the Utility Cost Test (UCT), the Ratepayer Impact Measure (RIM), and the Participant Cost Test (PCT).

For all tests, a program is cost effective when the present value of the benefits is greater than the present value of the costs. What varies among the different cost effectiveness tests is which benefits and costs are included. Using the benefit/cost ratio, an offering is cost effective when the ratio is greater than one.

$$\frac{B}{C} \text{ ratio} = \frac{\text{Present Value of Benefits}}{\text{Present Value of Costs}} \geq 1$$

Total Resource Cost Test (TRC): The TRC measures the benefits of avoided supply costs over the lifecycle incremental costs of the energy efficiency measures and program administrative costs. Unlike the UCT, the TRC considers the full cost of the measure, not just the utility incentive cost.

Utility Cost Test (UCT): The UCT is a valuation of the costs and benefits from the perspective of the utility. It is measured by comparing the value of the supply-side benefits to the incentive and administrative costs associated with the energy efficiency programs. Unlike the TRC, the UCT considers incentive costs as opposed to full incremental measure costs.

Ratepayer Impact Measure (RIM): The RIM is a valuation of the net benefits of the energy efficiency programs from the perspective of the nonparticipants. It is measured by comparing supply-side benefits to the costs of the programs, in terms of utility incentive costs, utility administrative costs and electric monetary savings, or lost revenue from the utility perspective.

Participant Cost Test (PCT): The PCT values the benefits of the programs from the perspective of program participants. It measures the electric monetary savings of the participants as compared to the measures costs net of utility incentives.



Table 3 is a summary of cost effectiveness test benefit/cost ratios for all proposed programs with forecasted savings and for the overall portfolio.

	Total Resource Cost Test (TRC)	Utility Cost Test (UCT)	Participant Cost Test (PCT)	Ratepayer Impact Measure Test (RIM)
Residential Programs				
Efficient Products	1.37	2.36	3.55	0.40
HVAC Equipment	0.53	2.19	1.20	0.41
Appliance Recycling	1.30	1.30	-	0.36
Income Eligible Efficiency	0.46	0.46	-	0.23
School Education	2.44	2.44	-	0.40
Home Audit	0.33	0.33	-	0.18
Behavior Change	1.72	1.72	-	0.33
Energy Savings Kits	1.00	1.00	-	0.44
Multi-Family Direct Install	0.74	0.74	-	0.26
Residential Total	1.01	1.69	3.50	0.37
Business Programs				
Prescriptive	2.47	6.07	3.40	0.71
Custom	1.53	3.50	2.47	0.65
Commercial Midstream	3.82	8.91	5.32	0.77
Small Business Direct Install	1.34	2.72	2.03	0.67
Combined Heat and Power	2.34	8.68	3.16	0.67
Mercantile Self-Direct	0.92	5.37	1.30	0.66
Business Total	2.07	5.38	2.95	0.70
	Total Resource Cost Test (TRC)	Utility Cost Test (UCT)	Participant Cost Test (PCT)	Ratepayer Impact Measure Test (RIM)
PLAN TOTAL*	1.57	3.16	3.13	0.57

*Costs in plan total include customer education and EM&V.

Table 3 Summary of Cost Effectiveness Scores



Introduction

In keeping with the energy efficiency goals of Ohio Senate Bill 221, DP&L launched a series of energy efficiency programs in 2009 designed to help customers save energy and money. Program offerings are designed to serve all customer classes, including residential, business and cross sector.

In accordance with O.R.C. §4901: 1-39-04, DP&L is submitting this three-year energy efficiency portfolio plan. This plan seeks to build on the success of the current programs executed under the portfolio plan approved in Case No. 13-833-EL-POR, while exploring new ways to help customers save. Included in this plan is a review of the savings potential within the DP&L service area, cost-benefit analyses, implementation plans for a balanced portfolio of energy saving programs, and an overview of DP&L's evaluation, measurement and verification approach.

Plan Goals

In developing this updated portfolio of energy efficiency programs, DP&L had the following goals:

- Comply with Ohio's energy efficiency benchmark targets as outlined in O.R.C. §4928.66(A)(1)(a) and O.R.C. §4928.66(A)(1)(b).
- Develop cost-effective programs that provide value to customers.
- Leverage current program successes and program learning since 2009.
- Equitably provide savings opportunities for all customer classes.
- Provide a variety of programs in which customers can participate.
- Deliver quality customer programs that promote customer satisfaction with energy efficiency.
- Promote general market transformation and education to promote energy efficiency.
- Capture savings opportunities that have been identified in the market potential study.
- Implement best practices of other successful energy efficiency programs.
- Partner with collaborative members and other utilities when possible to capture program efficiencies and reach various customer groups.



Portfolio Plan Development

This section outlines various steps that were taken and elements that were considered during the development of the portfolio plan including the market potential update, various program design criteria, stakeholder participation and alignment with other utility programs.

Market Potential Study

In accordance with O.R.C. §4901: 1-39-03, DP&L commissioned The Cadmus Group to conduct a market potential study. The study analyzed the levels of technical, economic, and realistically achievable potential in DP&L's service territory for the time period starting in 2017 through 2026. Study results inform energy-efficiency program planning and program design by showing the quantity of available potential and how it is distributed by sector, market segment, and end use. The complete study is included as Exhibit 2.

Program Design Criteria

In designing the energy efficiency programs and portfolio as a whole, DP&L took into account the criteria consistent with O.R.C. §4901: 1-39-03, which include the following:

Relative Cost Effectiveness

The primary test used to determine the overall cost effectiveness of the portfolio was the total resource cost test (TRC). Although individual programs are not required to be cost effective, DP&L used the TRC to determine program cost effectiveness as well. The relative cost effectiveness of programs was one of the criteria used in determining the programs to include in the portfolio, although not the only criteria. Other program design criteria include the additional criteria listed in this section.

In addition to the TRC, DP&L also calculated the utility cost test, the ratepayer impact test and the participant cost test at the portfolio level.

A further explanation of the cost effectiveness tests and test data are included in the cost effectiveness section of this plan.

Benefit to All Members of a Customer Class & Potential for Broad Participation

DP&L considered the breadth of potential participation within a customer class. A broader level of potential participation within a customer class provides equity and promotes higher levels of savings.

Magnitude of Energy and Demand Savings

The magnitude of energy and demand savings was taken into account in developing a portfolio that would enable DP&L to continue on a trajectory to achieve the statutory benchmarks through 2027. The magnitude of energy and demand savings was also



taken into account to calculate the cost effectiveness tests, since the greater the savings the greater the benefits. Estimated energy and demand savings are included in each program plan.

Non-Energy Benefits

As stated in O.R.C. §4901: 1-39-04, DP&L's portfolio must be cost effective but individual programs need not be. In accordance with this rule, DP&L considered non-energy benefits beyond cost effectiveness when designing its portfolio. Non-energy benefits include assisting income eligible groups reduce utility arrears, creating a balanced portfolio that can benefit all customer classes as well as the additional design criteria items listed in this section.

Equity Among Customer Classes

DP&L's portfolio plan seeks to provide equity among customer classes by including programs that can benefit all customer classes, including income eligible, residential non-heating, residential heating, commercial, industrial and governmental.

Relative Advantages/Disadvantages of Programs

In evaluating programs for inclusion in the portfolio plan, DP&L considered the relative advantages and disadvantage of programs. Advantages and disadvantages considered included potential savings, cost effectiveness, past program successes, and the additional criteria listed in this section.

Integration with Other Utilities' Programs

DP&L currently implements its school education program in conjunction with Vectren, the local gas distribution utility. DP&L has and will continue to integrate programs with other utilities as opportunities arise.

Bundling Measures for Cost Effectiveness

DP&L considered cost effectiveness and developed a TRC score for each program. Programs bundle multiple measures together to create cost effective programs, even though the cost effectiveness of measures within a program varies. Likewise, at the portfolio level, programs are bundled together to provide an overall cost effective portfolio, even though a specific program may not be cost effective.

Engaging Supply Chain, Leveraging Partners

DP&L programs currently engage the supply chain and leverage partners in program delivery. This includes working with lighting manufacturers, area retailers, HVAC contractors and distributors, community action agencies, and commercial and industrial distributors and contractors. These partners are a critical component of the success of the programs. This portfolio plan seeks to continue and build on this success.



Addressing Market Barriers or Failures, Market Transformation

In developing program implementation plans, DP&L considered the program's potential for addressing market barriers or failures in order to deliver energy efficiency to customers. DP&L programs work to overcome these barriers, and transform markets, through economic incentives as well as promotion and education.

Stakeholder Participation

DP&L engaged its stakeholder group with the adoption of its first energy efficiency portfolio plan and has held quarterly meetings of the stakeholder group since it launched its programs in 2009. Meeting topics include updates on program performance, expenditures, evaluation results, program modifications and other topics as requested by collaborative members. In addition, two of DP&L's program implementers are collaborative members: Ohio Partners for Affordable Energy and People Working Cooperatively.

DP&L also works with its collaborative members outside of the formal meeting process as requested. For instance, DP&L coordinated a combined heat and power customer workshop with the Ohio Environmental Council.

Members of the stakeholder group, also known as the energy efficiency collaborative include representatives of:

Environmental Law and Policy Center	Ohio Energy Group
Sierra Club	Ohio Consumers' Counsel
Industrial Energy Users – Ohio	Ohio Advanced Energy Economy
Ohio Environmental Council	Ohio Hospital Association
Ohio Manufacturers' Association	Ohio Partners for Affordable Energy
Public Utilities Commission of Ohio	

With regard to the portfolio plan, the energy efficiency collaborative is very familiar with DP&L's current and continuing suite of programs. The Collaborative is provided with a program update at each meeting. Potential new programs and recovery mechanisms are also discussed at meetings. These include pilot programs, combined heat and power, bidding into PJM and shared savings. In addition, informal discussions have occurred about other utility programs and their potential value, such as behavior modification.

Alignment of Programs with Other Utilities

DP&L worked with other utilities in implementing its first two portfolio plans and will continue to do so as opportunities present themselves to create program efficiencies and enhance customer service.



At the suggestion of the energy efficiency collaborative, DP&L and Vectren have worked together to deliver a school education program that addresses both electric and gas savings. DP&L and Vectren share a number of common customers in the Dayton area, and this combined program creates efficiencies in program delivery and increases the quality of the program for teachers and students alike.

DP&L and Vectren also work jointly with the University of Dayton to deliver commercial building assessments at no cost to the customer.

In addition to these programs, DP&L communicates with the other utilities in the state to learn about best practices, other utility programs and common challenges. Beyond Ohio, DP&L is a member of the Midwest Energy Efficiency Alliance (MEEA) and participates in the organization's information-sharing efforts. DP&L is also a member of the Association of Energy Service Professionals (AESP) and the DesignLights Consortium™, and has been an ENERGY STAR Partner since 2009.



Residential Programs

Programs Overview

The following pages contain plans for programs offered to residential customers. These plans are intended to be general implementation guidelines as opposed to specific and detailed operating plans. DP&L has learned through its previous experience that a level of implementation flexibility needs to be maintained to allow for necessary program adjustments.

Expected budgets, participation, and savings have been developed based on past experience, best practices, and implementation vendor projections to demonstrate the expected size and scope of each program. Actual results may vary depending on factors such as customer acceptance, product and technological innovations, changing standards and codes, and evaluation practices.

Likewise, the evaluation plans are intended to provide an overview of the evaluation, measurement, and verification activities that will most likely occur over the three-year portfolio plan period. Detailed evaluation plans will be developed each year to ensure evaluations are following most current evaluation protocols and incorporate any new objectives to help administer the programs more effectively.

Additional information regarding the past implementation and evaluation of existing programs may be found in DP&L's annual energy efficiency and demand reduction/response portfolio status reports.³

The following are the proposed residential customer programs:

- Efficient Products – Expanded Program
- HVAC Equipment – Existing Program
- Appliance Recycling – Existing Program
- Income Eligible Efficiency – Existing Program
- School Education – Existing Program
- Home Audit– New Program
- Behavior Change – New Program
- Energy Savings Kits – New Program
- Multi-Family Direct Install – New Program

³The most recent portfolio status report is PUCO Case No. 16-0851-EL-POR.



Residential Efficient Products

Program Description

The Residential Efficient Products program offers incentives for the purchase of energy efficient residential measures, like lighting and appliances. The program will be offered in two ways: 1) as an upstream, manufacturer buy-down of efficient products, like LED light bulbs, sold at the retail level and 2) as an online/mail-in rebate program for qualifying products purchased by the customer. The program, an expansion of the existing Residential Lighting program, will increase the number and variety of energy-efficient products sold by providing incentives to decrease consumer costs. The program increases consumer awareness and acceptance of energy-efficient products and their benefits. Throughout the duration of the portfolio, DP&L will continue to evaluate the addition of efficient products as well as program delivery mechanisms.

Program Objectives

The goal of this program is to sell 3.4 million energy-efficient light bulbs and 18,000 energy-efficient appliances and save approximately 136,165 MWH of energy and 15.6 MW of demand during program years 2017 to 2019. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The Residential Efficient Program is designed for all DP&L residential customers who purchase efficient products through retail channels. All customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier.

Program Duration

The Efficient Products program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Incremental Annual Participants				
Measure	2017	2018	2019	Total 2017-2019
Efficient Light Bulbs	1,126,649	1,141,000	1,142,300	3,409,949
Efficient Appliances	6,090	6,150	6,215	18,455
Total Efficient Products	1,132,739	1,147,150	1,148,515	3,428,404



Program Participation Requirements

Intended program participants are residential customers of DP&L that purchase a qualified efficient product from a retail channel.

Incentives

Incentives may be offered in the form of a discount at the register at the time of purchase or in the form of a rebate check mailed to the participating customer's home. The decreased cost along with the ease of participation will contribute to influencing customer choice of efficient products purchased.

Marketing Approach

Marketing efforts will include a combination of in-store signage and mass media communications. Marketing materials will promote not only the incentive available to customers but the overall savings in energy costs from switching to efficient products. In-store, point-of-purchase materials will educate the customer at the time of the purchasing decision. To create general program awareness, mass communications may include radio, print, and web ads, which have been utilized successfully in previous program years.

This program also lends itself well to events at participating retail outlets. These events generate awareness, allow program staff to educate customers one-on-one, and increase purchases of efficient products. DP&L may host similar events, as appropriate, throughout the program duration.

Other marketing tactics may include bill stuffers, web pages, and presence at community events.

Implementation Approach

DP&L and implementation partners will negotiate discounts with light bulb manufacturers, establish partnerships with retailers, oversee the implementation of cooperative advertising and in-store signage, audit retail outlets to confirm appropriate program policies are being implemented, and track the number of efficient products purchased. The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	44,640	45,701	45,824	136,165
Summer Peak Demand (MW)	5.1	5.2	5.3	15.6



Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$4,084,471	\$3,826,900	\$3,621,045	\$11,532,416
Marketing & Administrative	\$1,261,014	\$1,288,344	\$1,316,495	\$3,865,853
Total	\$5,345,485	\$5,115,244	\$4,937,540	\$15,398,269

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$7,438,781	\$7,620,450	\$7,658,496	\$22,717,727

Market Transformation Activities

The Residential Efficient Products program addresses two primary market barriers that deter customers from switching to efficient products: lack of awareness and knowledge of efficient products, and upfront cost. Through this program, DP&L will communicate the energy and cost-saving benefits of energy-efficient residential products as well as the variety of efficient product options available. In addition, program staff will educate customers about how to select efficient light bulbs, in particular, considering lumens and degrees Kelvin as opposed to simply wattage. This is of particular importance as lighting standards continue to evolve and the wattage of common and familiar light bulbs is reduced.

The incentive provided will help reduce the upfront cost for customers and facilitate purchases of efficient products. The ultimate goal for this program is to create customer demand for efficient products and move the market.

EM&V Plan

The impact evaluation approach for Residential Efficient Products may include: review of the participant database, a review of secondary sources and TRM savings calculations, telephone surveys, on-site product inventory, and a cost-effectiveness analysis. The participant database is maintained by the implementation vendor and includes information such as bulb types, package size, wattage, number of packages shipped, appliance type, and appliance model number. The information will be reviewed for accuracy and reasonableness. The Ohio TRM has been the primary source for calculating savings. However, secondary sources have been referenced and utilized as needed. For example, past evaluation activities have included telephone surveys, on-site product inventory and hours of use metering with a randomly selected sample of DP&L's residential population. These data sources provided information such as



customer awareness of efficient products, customer satisfaction and barriers to adoption, penetration and saturation of efficient products. Similar surveys will be utilized in future program years if needed.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	1.37
Utility Cost Test (UCT)	2.36
Participant Cost Test (PCT)	3.55
Rate Impact Measure (RIM)	0.40

Residential HVAC Equipment

Program Description

The Residential HVAC Equipment program offers rebates for the installation of new or replacement, high efficiency heating and cooling equipment. The objectives are to increase consumer awareness of energy-efficient products and their benefits as well as motivate customers to purchase efficient HVAC equipment that goes above and beyond the current minimum standard for efficiency.

Program Objectives

The goal of this program is to provide rebates for 20,922 new efficient HVAC products and save approximately 22,686 MWH of energy and 4.2 MW of demand during program years 2017 to 2019. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

Intended program participants are homeowners or landlords purchasing a new or replacement HVAC equipment that will be installed at a residence within the DP&L service territory. All customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier.

Program Duration

This residential HVAC Rebates program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Incremental Annual Participation (Units)				
Measure	2017	2018	2019	Total 2017-2019
Central Air Conditioners	2,042	2,042	2,042	6,126
Air Source Heat Pumps	871	871	871	2,613
Ground Source Heat Pumps	171	171	171	513
Ductless Mini-Splits	116	116	116	348
Electronically Commutated Motors	1,335	1,335	1,335	4,005
Thermostats	2,424	2,424	2,424	7,272
Heat Pump Water Heaters	15	15	15	45
Total HVAC Rebates	6,974	6,974	6,974	20,922



Program Participation Requirements

Customers must purchase qualifying units through participating HVAC contractors. The customer will receive a rebate check from DP&L. Throughout the duration of the portfolio, DP&L will continue to evaluate the addition of efficient HVAC measures as well as program delivery mechanisms.

Incentives

HVAC incentives will be offered in the form of a rebate check from DP&L. The decreased cost along with the ease of participation will contribute to influencing customer decisions to move forward with the efficient system installation.

Marketing Approach

The program will be marketed largely through a participating HVAC contractor network. Since contractors work directly with DP&L customers, they are able to offer rebates at the point-of-sale. Participating contractors are motivated to offer the rebates as a sales tool, providing a discount that a non-participating contractor cannot.

Contractor efforts will be supplemented with direct consumer marketing. Materials will communicate the available discount as well as the benefits of energy efficient HVAC systems. Marketing tactics may include bill stuffers, web pages, mass media advertising, and presence at community events.

Implementation Approach

DP&L and its implementation partner(s) will establish and maintain a participating retailer and contractor network, oversee the implementation of cooperative advertising, audit contractor paperwork, and track the number of rebates issued. The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	7,562	7,562	7,562	22,686
Summer Peak Demand (MW)	1.4	1.4	1.4	4.2

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.



Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$1,144,070	\$1,144,070	\$1,144,070	\$3,432,210
Marketing & Administrative	\$510,680	\$528,001	\$540,691	\$1,579,372
Total	\$1,654,750	\$1,672,071	\$1,684,761	\$5,011,582

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$6,412,973	\$6,412,973	\$6,412,973	\$19,238,919

Market Transformation Activities

The upfront cost required to purchase a new HVAC system is a barrier for customers. The incremental cost required to purchase a system with an efficiency rating beyond the minimum code is an additional barrier for customers. This program helps ease the cost burden by providing a financial incentive. Since the incentive is only provided for high-efficiency systems, the program is more effective when paired with messaging regarding the energy and cost savings benefits of an efficient HVAC system. Since HVAC contractors work directly with DP&L customers, a goal of the program is to work closely with contractors on how to clearly communicate and properly sell high efficiency systems.

EM&V Plan

The impact evaluation approach for the Residential HVAC Rebate program will include participant billing analysis, engineering calculations and secondary sources, program database review and cost-effectiveness analysis. Savings will be calculated using a combination of billing analyses, engineering calculations, secondary sources and the Ohio TRM. The program database will be reviewed for input accuracy and completeness of data.

The general process evaluation approach will consist of: staff interviews, participant surveys, and/or trade ally surveys (as needed). Staff interviews will focus on program processes and procedures, changes to program design if applicable, training opportunities with customers and contractors, program successes to date and future program challenges.

In the past, telephone surveys targeting stratified samples of program participants were conducted to assess how customers learned about the program, satisfaction with program processes and incentive levels, general information regarding the functionality of replaced equipment, and motivations for replacing existing equipment. Similarly, telephone surveys with participating contractors have been used to understand how well the program is working for their company, their insights into why customers are purchasing high-efficiency equipment, information regarding equipment replaced, and typical business practices. Moving forward participant and trade ally surveys will be



used to capture similar information or incorporate new research objectives to help inform program planning as needed.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	0.53
Utility Cost Test (UCT)	2.19
Participant Cost Test (PCT)	1.20
Rate Impact Measure (RIM)	0.41

Residential Appliance Recycling

Program Description

The Residential Appliance Recycling program is designed to promote the retirement and recycling of inefficient appliances from households by offering an incentive for turning in working equipment. Appliances are picked up directly from customers' homes and are transported to a facility for recycling. The targeted appliances are refrigerators and freezers, but DP&L may include other appliances as appropriate. Participating customers may also be offered a free energy savings kit when their appliance is picked up.

Program Objectives

The goal of this program is to retire 9,000 working appliances and save approximately 7,761 MWH of energy and 1.2 MW of demand during program years 2017 to 2019. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The Residential Appliance Recycling program is targeted for all DP&L residential customers with working inefficient appliances. All customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier. Business customers with qualifying units are eligible to participate in this program. All costs for business customer pick-ups will be appropriately charged to the business customer energy efficiency rider.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Measure	Incremental Annual Participants			Total 2017-2019
	2017	2018	2019	
Inefficient Refrigerators and Freezers	3,000	3,000	3,000	9,000

Program Participation Requirements

Intended program participants are residential and business customers of DP&L who own appliances. Appliances must be standard residential units, from 10 to 30 cubic feet. Refrigerators and freezers will be picked up from any location in the home, including the basement, but there must be a clear path of access. To prove there is



energy to be saved, appliances must be plugged in and in working condition at the time of the pick-up.

Incentives

Incentives will be offered in the form of a check mailed to the participating customer.

Marketing Approach

Marketing materials will communicate the incentive available to customers in addition to the long-term energy savings potential from discontinuing the use of an old, inefficient refrigerator or freezer. Promotions will also communicate the environmental benefit of recycling appliance materials and properly disposing of ozone-destroying toxins. Marketing tactics may include bill stuffers, web pages, mass media advertising, and presence at community events, all with the goal of increasing program awareness and customer participation.

Implementation Approach

DP&L will work with an implementation partner that will complete all details of the process including scheduling appointments, picking up qualifying units, and processing payments to participating customers. The implementation vendor will also be responsible for properly deconstructing appliances as well as recycling and disposal of appliance components. The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	2,587	2,587	2,587	7,761
Summer Peak Demand (MW)	0.4	0.4	0.4	1.2

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$170,000	\$172,000	\$174,000	\$516,200
Marketing & Administrative	\$603,874	\$614,490	\$625,425	\$1,843,789
Total	\$773,874	\$786,490	\$799,625	\$2,359,989

Participant Costs



Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

Getting rid of an old refrigerator or freezer can be challenging. Knowing where to take the appliance for recycling is the first hurdle. Then, there are often costs and transportation required. Due to the challenges, many old inefficient appliances simply move to the basement or garage and become second refrigerators or freezers in the home. The appliance recycling program addresses these barriers, providing an easy, no-cost way for customers to dispose of their old appliance. It also provides an incentive payment to customers to encourage them to take action and schedule a pick-up.

EM&V Plan

Evaluations for Appliance Recycling programs differ from most demand side management programs in that savings are incentivized by removing an operable but inefficient measure, rather than rebating a more efficient one. The impact evaluation approach will include a program database review, use of a previously developed regression model to estimate use of removed units, a participant survey, and a cost-effectiveness analysis. Data tracking will be assessed for quality. Participant surveys will be conducted primarily to develop a part-use factor which will then be applied to the estimated use through the regression model. The participant survey will also determine satisfaction, general energy efficiency awareness and performance of implementation vendor.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	1.30
Utility Cost Test (UCT)	1.30
Participant Cost Test (PCT)	-
Rate Impact Measure (RIM)	0.36

Residential Income Eligible Efficiency

Program Description

The Residential Income Eligible Efficiency program is designed to identify and implement energy efficiency measures for qualifying homes, thereby reducing the homeowners' electric bill. Home energy audits and inspections will be conducted and cost-effective efficiency measures will be installed. A limited number of health and safety measures may also be addressed through the program.

Program Objectives

The goal of this program is to impact approximately 1,874 homes and save approximately 4,552 MWH of energy and 0.5 MW of demand during program years 2017 to 2019. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

This program is available to income eligible residential DP&L electric customers with household incomes up to 200 percent of the federal poverty level. All qualifying customers taking delivery service from DP&L are eligible for this program, regardless of their choice of generation supplier.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Measure	Incremental Annual Participants			Total 2017-2019
	2017	2018	2019	
Homes Impacted	594	624	655	1,874

Program Participations Requirements

The program is available to participants with household incomes up to 200 percent of the federal poverty level or who are qualified for one of the following: the Ohio Home Weatherization Assistance Program (HWAP), the Percentage of Income Payment Plan (PIPP), or the Home Energy Assistance Program (HEAP). Eligible households include single-family and multi-family homes.



Incentives

Energy-efficient measures will be installed in customers' homes, at no charge. Property landlords may be required to pay for a portion of the measures installed.

Marketing Approach

Program marketing is primarily performed by implementation partners and agencies. As a result, this program requires less direct customer marketing. However, community action agencies may perform supplemental marketing as needed. Marketing tactics may include bill stuffers, web pages, and promotional fliers. Messages will focus on increasing consumer awareness of the services available to them as well as the long-term benefits of energy efficiency.

Implementation Approach

DP&L will work with an implementation partner that will perform home energy audits and the installation of qualified, energy-efficient measures. The implementation partner will ensure that all services, materials, and supplies are of good quality and installed in a professional, workmanlike way, and that all auditors and contractors are trained and certified to complete energy efficiency work. The implementation partner will track the quantity and type of measures installed. The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	1,444	1,516	1,592	4,552
Summer Peak Demand (MW)	0.1	0.2	0.2	0.5

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$1,047,786	\$1,100,175	\$1,155,184	\$3,303,144
Marketing & Administrative	\$263,591	\$275,910	\$288,820	\$828,320
Total	\$1,311,376	\$1,376,085	\$1,444,003	\$4,131,464



Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

Income eligible customers often live in inefficient homes in need of upgrades. As a result, energy bills are high and homes are uncomfortable. However, due to financial constraints, customers are often unable to pay their bills or pay for the upgrades needed to reduce energy consumption. By providing no-cost services to eligible customers, this program reduces the homeowners' electric bills and saves them money. The program has the secondary benefit of reducing customer arrearages, which can help save money for all customers.

EM&V Plan

The impact evaluation approach for the Income Eligible Efficiency program will include the following components as needed: engineering analysis, program database review, participant surveys, on-site measure and quality verification and cost-effectiveness analysis. Savings will be calculated based on engineering analyses, data from other sources as well as information from the Ohio TRM. The program database will be reviewed for irregularities in data collection and to ensure that all data needed for evaluation is being collected.

The process evaluation will include participant surveys to collect data regarding participant satisfaction, and document measure installation as well as some potential non-energy benefits. In the past, the income eligible evaluation included in-depth surveys with agencies and program staff. Moving forward similar in-depth interviews will be conducted with some or all interested program stakeholders.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	0.46
Utility Cost Test (UCT)	0.46
Participant Cost Test (PCT)	-
Rate Impact Measure (RIM)	0.23



Residential School Education

Program Description

The Residential School Education program is designed to educate students about energy and energy efficiency, and reduce electricity use of program participants. Take-home energy savings kits are provided to students as well as accompanying classroom curriculum and training for teachers. Additional educational events and opportunities, like the Energy Fair, are offered to schools and students throughout the year. This program may be delivered jointly with the local gas company in order to educate students about using both gas and electricity efficiently. Kit contents may include:

- LEDs
- Furnace filter whistle
- LED night light
- Foam weather-strip
- Energy efficient showerhead
- Bathroom sink aerator
- Kitchen sink aerator
- Hot water temperature card
- Energy use gauge thermometer
- Door sweep
- Energy savers booklets
- Flow meter bag
- Refrigerator thermometer card

Program Objectives

The goal of this program is to distribute 27,000 take-home energy savings kits and save approximately 11,406 MWH of energy and 2.4 MW of demand during program years 2017 to 2019. Program years run July through June to align with the school calendar. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

This program is available to school districts in the DP&L service territory.

Program Duration

This program is designed to run through the duration of this portfolio plan.



Estimated Program Participation Levels

Incremental Annual Participants				
Measure	2017	2018	2019	Total 2017-2019
Energy Savings Kits	9,000	9,000	9,000	27,000

Program Participation Requirements

This program is available to school districts in the DP&L service territory. Energy-savings kits and curriculum are most appropriate for students in grades 5-12. Program participants are asked to complete a survey reporting whether they installed measures in the take home energy savings kits.

Incentives

Take-home kits, curriculum, and classroom materials will be provided to participating schools and teachers at no charge.

Marketing Approach

The program will be promoted to school districts in DP&L's service territory, emphasizing the educational value of the program as well as the availability of the energy savings materials. Marketing tactics may include emails, letters, and personal meetings with curriculum coordinators, principals, or superintendents.

Implementation Approach

DP&L will work with an implementation partner that will develop and maintain relationships with school administrators and teachers. The implementation partner will train teachers, coordinate the distribution of take home energy savings kits, and collect data regarding installation of energy savings measures. The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	3,802	3,802	3,802	11,406
Summer Peak Demand (MW)	0.8	0.8	0.8	2.4

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.



Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$221,030	\$221,030	\$221,030	\$663,090
Marketing & Administrative	\$171,850	\$179,627	\$187,775	\$539,252
Total	\$392,880	\$400,657	\$408,805	\$1,202,342

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

This program produces measureable energy savings through the installation of measures like CFLs and low flow showerheads. However, it is difficult to measure on an absolute basis the long-term impact of this program since the core and primary motivation is education. The hands-on educational lessons provide an opportunity for students and their families to engage with principles of energy and energy efficiency that will ideally generate awareness and energy-efficient habits throughout their lives.

EM&V Plan

The School Education program impact evaluation will utilize student surveys, which are administered by the program, to verify measure installation, assess baseline usage and summarize behavioral changes. This approach is consistent with previous program evaluations. Participant data will be used to conduct follow-up parent surveys. The follow-up parent survey will determine the installation rate of kit measures after the student survey was completed as well as possible participation in other energy efficiency programs and customer satisfaction. The Ohio TRM and secondary sources will be used to determine deemed savings. A cost-effectiveness analysis will be conducted.

The process evaluation will consist of interviews with program staff. Program staff surveys will address program processes and procedures, progress on teacher training and the program's effectiveness. These interviews may also address perceived barriers and approaches to overcome as well program successes and future challenges.



Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	2.44
Utility Cost Test (UCT)	2.44
Participant Cost Test (PCT)	-
Rate Impact Measure (RIM)	0.40

Residential Audit Program

Program Description

The Residential Audit program will provide energy audit services and low-cost direct install measures to residential customers living in single family homes and multifamily buildings of 4 units or less. The single family market has significant barriers to energy efficiency. The primary barrier is a lack of knowledge as to the ways that they can improve home efficiency and change behaviors to save energy. Another barrier is the lack of funds to make needed improvements to their homes that would save energy and money. By providing surveys and audits at various levels, the homeowner can improve their efficiency and reduce energy costs.

Program Objectives

The objective of the Residential Audit program is to provide in-home energy information and easy to install measures to help customers take immediate action to reduce energy use. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

All residential buildings of four units or less are eligible for the residential audit program. Other types of residential dwellings, such as, connected houses, condominiums and townhouses may be eligible for the program. The program will also attempt to work collaboratively with the local gas utility for dual fuel homes.

Program Duration

The Residential Audit program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Incremental Annual Participation (Units)				
Measure	2017	2018	2019	Total 2017-2019
Direct Install LED	21,000	25,200	30,240	76,440
Direct Install Kitchen Aerator 1.5 GPM	3,000	3,600	4,320	10,920
Direct Install Bathroom Aerator 1.0 GPM	6,000	7,200	8,640	21,840
Direct Install Low Flow Showerhead 1.25 GPM	3,000	3,600	4,320	10,920
Total Measures Installed	33,000	39,600	47,520	120,120



Program Participation Requirements

Throughout the duration of the portfolio, DP&L will continue to evaluate the addition of efficient measures as well as program delivery mechanisms.

Incentives

Audits will be performed and energy-efficient measures will be installed in customers' homes, at no charge.

Marketing Approach

Education and promotional materials will be developed for all residential customers. The marketing and communications strategy will be designed to inform customers of the availability and benefits of the program and how they can participate. Presentations may be made to key trade ally groups to actively solicit their participation in the program. Marketing activities may include:

- Direct mail to potential participant customers based on zip codes that indicate an age of homes that would likely benefit from the audit program;
- Public relations materials and general media;
- Brochures that describe the benefits and features of the program, including program contact information;
- Bill inserts, bill messages and email messages to targeted customers;
- Informational content on the DP&L website;
- Customer representatives trained to promote the program to customers;

Implementation Approach

DP&L will provide program management, vendor referrals, tracking and reporting, oversight, and regulatory review. DP&L will utilize an implementation contractor to provide turn-key implementation services including training and education, application and incentive processing, tracking, verification, technical support, customer support, and marketing, jointly with DP&L. Incentives will be provided on audits. Low-cost direct install measures will also be provided at no cost to the customer. The implementation of this program will be coordinated with Vectren where its territory overlaps with DP&L's. DP&L plans to collaborate with Vectren, when feasible, to deliver the Residential Audit Program so both electric and natural gas measures are covered. The third party implementation vendor will serve as an extension of the utility to help implement this program.



Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	1,371	1,646	1,975	4,992
Summer Peak Demand (MW)	0.1	0.2	0.2	0.5

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$156,321	\$187,585	\$225,102	\$569,008
Marketing & Administrative	\$692,265	\$709,734	\$727,726	\$2,129,723
Total	\$848,586	\$897,319	\$952,828	\$2,698,733

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

The single family market has significant barriers to energy efficiency. The primary barrier is a lack of knowledge as to the ways that they can improve their home and change behaviors to save energy. Another barrier is the lack of funds to make needed improvements to their homes that would save energy and money. By providing surveys and audits at various levels, the homeowner can improve their efficiency and reduce energy costs. This program is designed to help overcome these barriers and improve energy efficiency for this customer group who has significant energy needs and a large potential for savings.

EM&V Plan

The impact evaluation approach for the Residential Audit program may include participant billing analysis, engineering calculations and secondary sources, program database review and cost-effectiveness analysis. Savings will be calculated using a combination of billing analyses, engineering calculations, secondary sources and the Ohio TRM.



The general process evaluation approach may consist of: staff interviews, participant surveys, and/or trade ally surveys (as needed). Staff interviews will focus on program processes and procedures, changes to program design if applicable, training opportunities with customers and contractors, program successes to date and future program challenges.

In past residential programs, telephone surveys targeting stratified samples of program participants were conducted to assess how customers learned about the program, satisfaction with program processes and incentive levels, general information regarding the functionality of installed measures, and motivations for replacing existing equipment. Moving forward, participant surveys may be used to capture similar information or incorporate new research objectives to help inform program planning as needed.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	0.33
Utility Cost Test (UCT)	0.33
Participant Cost Test (PCT)	-
Rate Impact Measure (RIM)	0.18



Residential Behavior Change

Program Description

The goal of the Residential Behavior Change program is to motivate customers to better manage their energy use through education, benchmarking, and customer-specific information about how to reduce their usage. Customers will receive home energy reports mailed to their homes, access to online tools, and periodic communications from the utility including high usage alerts. The goal is that by informing customers, they will become more engaged and begin to make behavioral changes that will have both an immediate and lasting impact of reducing their energy consumption.

Program Objectives

The goal of this program is to send 450,000 home energy reports and save approximately 48,700 MWH of energy and 7.6 MW of demand during program years 2017 to 2019. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The Residential Behavior Change program is designed for all DP&L residential customers. All customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Measure	Incremental Annual Participants			Total 2017-2019
	2017	2018	2019	
Home Energy Reports	150,000	150,000	150,000	450,000

Program Participation Requirements

There is no cost to participate, and customers can choose their level of involvement.

Incentives

The program is designed to provide low or no cost suggestions for behavior changes that, if adopted, will ideally produce energy and cost savings for the customer. This



program will also direct customers to other DP&L energy efficiency programs which provide a financial incentive.

Marketing Approach

In contrast to other programs in this portfolio, DP&L does not need to solicit customer participation. Customers are selected to receive home energy reports based on sharing similar characteristics with other customers and exhibiting the potential to reduce energy usage. All customers can opt out of receiving reports at any time. The marketing challenge is to capture customers' attention, keep them engaged, and encourage them to make behavioral changes throughout the duration of the program. This effort will rely on consistent and repeated messaging across a variety of communication channels which may include but are not limited to mail, web, and email. Messaging must be simple, easy to understand, and compelling in order to stimulate behavior change.

Implementation Approach

DP&L will work with an implementation partner to manage this program. Implementation strategy will include a consistent flow of communication in order to keep customers engaged. DP&L will work with an implementation partner to craft messages that are informative, easy to understand, and motivate customers to act. The implementation partner will oversee the production of all communications pieces and the collection and tracking of data for savings reports. The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	10,300	17,900	20,500	48,700
Summer Peak Demand (MW)	2.1	2.6	2.9	7.6

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2019-2019
Incentive	N/A	N/A	N/A	N/A
Marketing & Administrative	\$1,429,696	\$1,371,337	\$1,363,027	\$4,164,060
Total	\$1,429,696	\$1,371,337	\$1,363,027	\$4,164,060



Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2019-2019
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

A potential barrier to customers pursuing energy efficiency is an understanding of how energy is used in their home and the potential savings that can be realized from taking certain actions. By providing specific information about their own energy usage, customers will begin to learn how to gauge the volume of their energy consumption compared to similar homes and what behavior changes they can take to decrease it. To be effective, this program will need to provide regular communications with customers in order to capture their attention and keep them engaged in their behavior change process.

EM&V Plan

The Residential Behavior Change program impact evaluation will include a billing and cost-effectiveness analyses. The billing analysis will include a minimum of one-year customer consumption data for the census of participating and control groups. Consumption data will be weather normalized and savings already attributed to other programs will be removed from analysis.

The process evaluation will consist of telephone surveys for both the participant and non-participant groups. Surveys will focus on any differences between the groups and impacts the program is having on participants.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	1.72
Utility Cost Test (UCT)	1.72
Participant Cost Test (PCT)	-
Rate Impact Measure (RIM)	0.33



Residential Energy Savings Kits

Program Description

The Residential Energy Savings Kits program is designed to promote the adoption of energy-efficient measures in households by offering a free energy savings kit mailed to a participating customer's home. Customers must enroll in the program and request a kit. The kits may include two LED light bulbs, one energy-efficient showerhead, one kitchen faucet aerator, and one bathroom faucet aerator. DP&L will continue to evaluate the inclusion of other measures as appropriate.

Program Objectives

The goal of this program is to mail 60,000 energy savings kits and save approximately 8,265 MWH of energy and 5.4 MW of demand during program years 2017 to 2019. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The Residential Energy Savings Kits program is targeted for all DP&L residential customers. All customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier. Landlords may qualify to participate in this program.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Measure	Incremental Annual Participants			Total 2017-2019
	2017	2018	2019	
Energy Savings Kits	20,000	20,000	20,000	60,000

Program Participation Requirements

Intended program participants are residential customers of DP&L.

Incentives

The program is designed to provide energy efficient measures at no cost to the customer that, if installed, will produce energy and cost savings for the customer. This program will also direct customers to other DP&L energy efficiency programs which provide a financial incentive.



Marketing Approach

Marketing materials will communicate the energy savings kit availability to customers in addition to the long-term energy savings potential from installing the measures. Marketing tactics may include bill stuffers, web pages, mass media advertising, and presence at community events, all with the goal of increasing program awareness and customer participation.

Implementation Approach

DP&L will work with an implementation partner that will complete all details of the process including building energy savings kits, collecting customer orders, and fulfilling customer orders. The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	2,755	2,755	2,755	8,265
Summer Peak Demand (MW)	1.8	1.8	1.8	5.4

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$643,413	\$643,413	\$643,413	\$1,930,238
Marketing & Administrative	\$318,827	\$343,520	\$370,366	\$1,032,713
Total	\$962,239	\$986,933	\$1,013,779	\$2,962,951

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

A potential barrier to customers pursuing energy efficiency is an understanding of where to start. By offering easy enrollment and mailing an energy savings kit directly to a customer's home along with installation instructions, the customer can begin with the energy-efficient measures provided. After trying these measures and, ideally, saving



energy, participating customers may decide to adopt additional energy-efficient measures in their homes.

EM&V Plan

The Energy Savings Kits program impact evaluation will include a program database review and engineering calculations to determine program savings. The evaluation will also include a participant survey to verify measure installation and assess baseline usage and customer satisfaction. The Ohio TRM and secondary sources will be used to determine deemed savings. A cost-effectiveness analysis will be conducted.

The process evaluation will consist of interviews with program staff. Program staff surveys will address program processes and procedures, and the program's effectiveness. These interviews may also address perceived barriers and approaches to overcome as well program successes and future challenges.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	1.00
Utility Cost Test (UCT)	1.00
Participant Cost Test (PCT)	-
Rate Impact Measure (RIM)	0.44

Residential Multi-Family

Program Description

The Residential Multi-Family program provides targeted, cost-effective measures to multifamily households. The program targets multifamily complexes with units that are both individually metered and master metered. The program is designed to go beyond providing financial incentives to multi-family households and aims to make them well-educated energy consumers. The program aims to help residents gain a better understanding of their home energy use and achieve savings while also improving the comfort of their homes. In addition to educating and empowering multi-family customers to make energy-efficient home improvements, the program contains a set of direct install measures.

The Residential Multi-Family program has several components:

- Walk-Through Audits – On-site inspections and tests used to identify energy efficiency opportunities; audit reports contain specific recommendations, including expected costs, energy savings, and resource referrals.
- Direct Installation of Low-Cost Measures – Installation of a package of low-cost energy-saving measures, at no additional charge to the customer, to immediately improve the energy performance of the house.
- Assistance with Additional Measure Adoption – Rebates to audit participants who install weatherization measures recommended from the audit, as well as assistance on how to access rebates under other programs.

Program Objectives

The purpose of the Residential Multi-Family program is to help residential customers view the energy performance of their homes as more than the sum of independent decisions about individual components. The services are designed to bring customers to a more holistic view of home energy performance. The program is part of a long-term goal to raise awareness of home energy savings opportunities among residential customers and to help them take action using incentives offered by DP&L's energy efficiency programs.

The program will achieve several objectives:

- Improve customer understanding of how their homes use energy and how they can use it more effectively
- Procure immediate energy savings through installation of low-cost energy-saving measures
- Encourage installation of additional energy-saving measures with additional incentives



Targeted Customer Sector

The program targets electric only multifamily complexes with units that are both individually metered and master metered. Recruitment efforts target:

- Property management companies
- Multifamily Property owners
- Condominium board members

The goal is to have a single point of contact to schedule multiple properties to be retrofitted whenever possible. Customers that live in rental properties are typically underserved by energy efficiency programs, due to property owners' and management companies' reluctance to invest in energy efficiency measures. This program addresses this by providing measures that benefit both the resident and the property owner or management company through lower electric bills.

Program Duration

This residential Multi Family program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Incremental Annual Participants (Units)				
Measure	2017	2018	2019	Total 2017-2019
Direct Install LED	35,000	35,350	35,703	106,053
Kitchen Aerator 1.5 GPM	5,000	5,050	5,100	15,150
Bathroom Aerator 1.0 GPM	5,000	5,050	5,100	15,150
Low Flow Showerhead 1.25 GPM	5,000	5,050	5,100	15,150
Smart Strips	2,500	2,525	2,550	7,575
Total Measures Installed	52,500	53,025	53,553	159,078

Program Participation Requirements

This program targets all multifamily housing building owners of four or more tenant-occupied residential apartments or condominiums. Townhomes and buildings with three or fewer residential living units are directed to DP&L's Residential Audit & Weatherization Program.



Incentives

The measures and services to be included within this program include, but aren't limited to:

- LED Bulbs
- Kitchen Aerators
- Bathroom Aerators
- Low Flow Showerheads
- Smart Strips

Marketing Approach

The program is marketed to apartment associations using face to face meetings with property management firms and owners. As needed, apartment associations are identified and targeted for presentations. Participants are accepted on a first come, first served basis to prevent oversubscription. Should the need arise to target additional property types, the program implementer will work directly with property owners, associations, and management firms to identify qualified, interested customers. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Implementation Approach

DP&L will administer the Residential Multi-Family program through an implementation contractor.

DP&L's role will be to ensure:

- The implementation contractor performs all the activities associated with delivery of all components of the program, and
- Educational and program messages are delivered accurately and clearly to ensure the effectiveness of program delivery and maximize customer satisfaction with the program.

The third party implementation vendor will serve as an extension of the utility to help implement this program.

Savings Targets

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	3,379	3,412	3,446	10,237
Summer Peak Demand (MW)	0.3	0.3	0.3	0.9



Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$682,000	\$688,820	\$695,708	\$2,066,528
Marketing & Administrative	\$191,883	\$197,144	\$202,563	\$591,590
Total	\$873,883	\$885,964	\$898,272	\$2,658,119

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2013-2015
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

The multi-family market has significant barriers to energy efficiency. The primary barrier is the general lack of incentive for renters and landlords to invest in energy efficiency. Other barriers include a lack of awareness and knowledge as to ways to improve the residence and change behaviors to save energy. Another major barrier is the lack of funds to make needed improvements to residences that would save energy and money. This program is designed to help overcome these barriers and improve energy efficiency for this customer group who has large energy needs and a large potential for savings.

EM&V Plan

The impact evaluation approach for the Residential Multi-Family program may include participant billing analysis, engineering calculations and secondary sources, program database review and cost-effectiveness analysis. Savings will be calculated using a combination of billing analyses, engineering calculations, secondary sources and the Ohio TRM.

The general process evaluation approach may consist of: staff interviews, participant surveys, and/or trade ally surveys (as needed). Staff interviews will focus on program processes and procedures, changes to program design if applicable, training opportunities with customers and contractors, program successes to date and future program challenges.

In past residential programs, telephone surveys targeting stratified samples of program participants were conducted to assess how customers learned about the program, satisfaction with program processes and incentive levels, general information regarding the functionality of installed measures, and motivations for replacing existing equipment.



Similarly, telephone surveys with participating contractors have been used to understand how well the program is working for their company and their insights into why customers are participating. Moving forward participant and trade ally surveys will be used to capture similar information or incorporate new research objectives to help inform program planning as needed.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	0.74
Utility Cost Test (UCT)	0.74
Participant Cost Test (PCT)	-
Rate Impact Measure (RIM)	0.26

Commercial, Industrial, and Government Programs

Programs Overview

The following pages contain plans for programs offered to commercial, industrial and governmental customers. These plans are intended to be general implementation guidelines as opposed to specific and detailed operating plans. DP&L has learned through its previous experience that a level of implementation flexibility needs to be maintained to allow for necessary program adjustments.

Expected budgets, participation, and savings have been developed based on past experience and best practices to demonstrate the expected size and scope of each program. Actual results may vary depending on factors such as customer acceptance, product and technological innovations, changing standards and codes, and evaluation practices.

Likewise, the evaluation plans are intended to provide an overview of the evaluation, measurement, and verification activities that will most likely occur over the three-year portfolio plan period. Detailed evaluation plans will be developed each year to ensure evaluations are following most current evaluation protocols and incorporate any new objectives to help administer the programs more effectively.

Additional information regarding the past implementation and evaluation of existing programs may be found in DP&L's annual energy efficiency and demand reduction/response portfolio status reports.⁴

The following are the commercial, industrial, and government customer programs:

- Rapid Rebates – Existing Program
- Custom Rebates – Existing Program
- Commercial Midstream Program – New Program
- Small Business Direct Install – New Program
- Combined Heat & Power – New Program
- Mercantile Self-Direct – Existing Program

⁴The most recent portfolio status report is PUCO Case No. 16-0851-EL-POR.



Rapid Rebates

Program Description

The Non-Residential Prescriptive Rebate program (Rapid Rebates[®]) provides non-residential customers with incentives for new equipment purchases that reduce energy consumption and demand. Technologies that are covered in the program include energy efficient lighting, HVAC, motors, drives and compressed air. Approximately 100 unique measures are offered through the Rapid Rebates[®] program.

Program Objectives

The objective of the program is to help business and government customers overcome the upfront cost hurdle associated with energy efficient technologies. The program is designed to provide simple solutions for business customers who want to operate more efficiently. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The Rapid Rebates[®] program is designed for all DP&L business and government customers who purchase new energy efficient equipment through a manufacturer, distributor or contractor. All business and government customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

The following participation levels have been used for planning purposes. Qualifying measures and participation levels may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.

Incremental Annual Participants				
Measure Category	2017	2018	2019	Total 2017-2019
Lighting	1,212	1,218	1,224	3,654
HVAC	154	154	155	463
Motors & Drives	23	23	23	69
Compressed Air & Other	42	43	43	128
Total Measures Installed	1,431	1,438	1,445	4,314



Program Participation Requirements

Business and government customers may purchase any brand of equipment from any supplier they choose, as long as the equipment is new and meets the eligibility requirements detailed on the measure lists. Additionally, equipment must use electricity as the fuel source and be replacing existing equipment or be installed as part of a retrofit or new construction project.

Incentives

Incentives are intended to cover the incremental cost associated with moving to equipment with a higher efficiency rating than the available standard efficiency. Incentives may be adjusted at any time, in response to various factors such as customer demand, changing technology, and market price.

Marketing Approach

Marketing methods include publication of program information on the company website, mass media, print literature, bill inserts, inserts in local business journals, presentations at community- and vendor-sponsored events, one-on-one marketing by DP&L major account managers, and the utilization of a Channel Partner network. Channel Partners are contractors, engineers and distributors with energy efficiency experience. They have participated in DP&L rebate workshops and are familiar with using DP&L rebate programs to help customers save money. Channel Partners are viewed as an invaluable third party marketing extension of DP&L's internal group of program managers. They have direct contact with customers on a daily basis and can influence the customer's purchasing decisions.

Implementation Approach

DP&L plans to continue to implement and manage the Rapid Rebates[®] program with internal staff. Implementing the program in-house strengthens DP&L employee knowledge of energy efficiency programs and technologies. It also provides DP&L with the opportunity to build relationships with contractor networks and customers, leading to quality customer service. From time to time, DP&L may evaluate this internal implementation approach based on program volume and required technical knowledge and expertise. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

The following savings estimates have been used for planning purposes. Qualifying measures and associated savings may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.



Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	54,168	54,438	54,711	163,317
Summer Peak Demand (MW)	8.4	8.4	8.5	25.3

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, EM&V requirements and emerging technologies.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$4,289,806	\$4,504,296	\$4,729,511	\$13,523,613
Marketing & Administrative	\$1,302,358	\$1,341,429	\$1,381,671	\$4,025,458
Total	\$5,592,164	\$5,845,725	\$6,111,182	\$17,549,071

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$12,848,658	\$12,912,901	\$12,977,465	\$38,739,024

Market Transformation Activities

Through the Rapid Rebates® program, DP&L will communicate the energy and cost-saving benefits of energy-efficient upgrades to business customers. The program will also inform manufacturers, engineers, distributors and retailers about customer demand and preferences for energy-efficient technologies. These efforts, combined with the financial incentives provided by the rebates, will help to increase demand for energy efficient products.

EM&V Plan

The impact evaluation approach for the Rapid Rebates program will include a database review, site visits/engineering analysis, stakeholder interviews and a cost-effectiveness analysis. DP&L administers the commercial programs in-house and has developed and maintains a customer database. The database will be reviewed to assure appropriate data are being collected. Site visits will be utilized to verify measures are installed and operating. Engineering analysis will be used to calculate energy savings. The Ohio TRM and secondary source savings calculations and assumptions will be used as a reference to calculate deemed savings.



The process evaluation will include the following as needed: stakeholder interviews, participant and trade ally telephone surveys. These interviews and surveys will address program processes and procedures, progress on customer and contractor education, and the incentive mechanism effectiveness. These interviews may also address perceived barriers to overcome as well as program successes and future challenges.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	2.47
Utility Cost Test (UCT)	6.07
Participant Cost Test (PCT)	3.40
Rate Impact Measure (RIM)	0.71

Custom Rebates

Program Description

The Non-Residential Custom Rebate program provides non-residential customers with incentives for equipment purchases and industrial process improvements that reduce energy consumption and demand. Custom Rebates are for equipment not covered by DP&L's Rapid Rebates[®] program and is generally best suited for customized industry-specific or facility-specific applications. Energy efficient new construction projects, retro-commissioning projects, strategic energy management initiatives, and subsidized facility audits are also included in the Custom Rebate Program.

Program Objectives

The objective of the program is to help business and government customers overcome the upfront cost hurdle associated with energy efficient technologies and to promote innovative and emerging technologies. Savings estimates will be calculated in partnership with program implementers and evaluators, through data-logging of equipment and processes, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The Custom Rebate program is designed for all DP&L business and government customers who purchase new energy efficient equipment through a manufacturer, distributor or contractor. All business and government customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier. DP&L will explore targeting various customer segments to determine potential savings and develop appropriate targeted marketing efforts.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

The following participation levels have been used for planning purposes. Qualifying measures and participation levels may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.



Incremental Annual Participants (Projects Rebated)				
Measure Category	2017	2018	2019	Total 2017-2019
Equipment/Process Rebates	102	105	95	302
New Construction	23	25	28	76
Facility Audits	41	47	50	138
Retro-Commissioning	8	10	12	30

Program Participation Requirements

Business and government customers may purchase any brand of equipment from any supplier they choose, as long as the equipment is new and meets the eligibility requirements. Equipment must use electricity as the fuel source and be replacing existing equipment or be installed as part of a retrofit or new construction project. Customers must apply for a Custom Rebate prior to beginning their project. The pre-approval phase allows DP&L the opportunity to perform pre-installation auditing (in some cases, metering) of the affected systems.

Incentives

Incentives are intended to cover the incremental cost associated with moving to equipment with a higher efficiency rating than the available standard efficiency. Incentives are limited to 50% of the installed project cost. Incentives may be adjusted at any time, in response to factors such as customer demand, changing technology, and market price.

Marketing Approach

Marketing methods include publication of program information on the company website, mass media, print literature, bill inserts, inserts in local business journals, presentations at community- and vendor-sponsored events, one-on-one marketing by DP&L major account managers, and the utilization of a Channel Partner network. Channel Partners are contractors, engineers and distributors with energy efficiency experience. They have participated in DP&L rebate workshops and are familiar with using DP&L rebate programs to help customers save money. Channel Partners are viewed as an invaluable third party marketing extension of DP&L's internal group of program managers. They have direct contact with customers on a daily basis and can influence the customer's purchasing decisions.

Implementation Approach

DP&L plans to continue to implement and manage the Custom Rebate program with internal staff. Implementing the program in-house strengthens DP&L employee knowledge of energy efficiency programs and technologies. It also provides DP&L with the opportunity to build relationships with contractor networks and customers, leading to



quality customer service. From time to time, DP&L may evaluate this internal implementation approach based on program volume and required technical knowledge and expertise. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

The following savings estimates have been used for planning purposes. Qualifying measures and associated savings may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	17,217	18,444	18,508	54,169
Summer Peak Demand (MW)	2.9	3.1	3.2	9.2

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, EM&V requirements and emerging technologies.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$1,570,012	\$1,727,550	\$1,806,512	\$5,104,074
Marketing & Administrative	\$1,459,675	\$1,514,912	\$1,572,188	\$4,546,775
Total	\$3,029,687	\$3,242,462	\$3,378,700	\$9,650,849

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$5,618,535	\$5,885,737	\$5,725,482	\$17,229,754

Market Transformation Activities

Through the Custom Rebate program, DP&L will communicate the energy and cost-saving benefits of energy-efficient upgrades to business customers. The program will also inform manufacturers, engineers, distributors and retailers about customer demand and preferences for energy-efficient technologies. Combined with financial incentives in



the form of rebates, these activities will help to increase the demand for energy efficient products.

EM&V Plan

The Custom Rebates program offers incentives for projects not eligible under the Rapid Rebates® program. Therefore, evaluations under this program will require a broad range of activities which may include, but not limited to, the following: program database review, stakeholder interviews, participant surveys, site visits/engineering analysis, and cost effectiveness analysis.

The database will be reviewed to assure appropriate data are being collected. Site visits will be utilized to verify measures are installed and operating. Engineering analysis will be used to calculate energy savings. Secondary sources and assumptions will be used as a reference to calculate deemed savings.

The process evaluation will include the following as needed: stakeholder interviews, participant and trade ally telephone surveys. These interviews and surveys will address program processes and procedures, progress on customer and contractor education, and the incentive mechanism effectiveness. These interviews may also address perceived barriers to overcome as well program successes and future challenges.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	1.53
Utility Cost Test (UCT)	3.50
Participant Cost Test (PCT)	2.47
Rate Impact Measure (RIM)	0.65

Commercial Midstream Program

Program Description

The Commercial Midstream program (CMIP) provides non-residential customers with incentives for new equipment purchases that reduce energy consumption and demand. Technologies that may be delivered through the program include, but aren't limited to, energy efficient lighting and variable frequency drives. Products are available at participating distributors throughout DP&L's service territory.

Program Objectives

The objective of the program is to help business and government customers overcome the upfront cost hurdle associated with energy efficient technologies. The program is designed to provide simple solutions for business customers who want to operate more efficiently. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The CMIP is designed for all DP&L business and government customers who purchase new energy efficient equipment through a participating distributor. This program allows customers to receive an instant rebate at the point of sale rather than filing an on-line application through the Rapid Rebates[®] program. All business and government customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

The following participation levels have been used for planning purposes. Qualifying measures and participation levels may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.

Incremental Annual Participants (Measures Installed)				
Measure Category	2017	2018	2019	Total 2017-2019
Units	129,230	142,153	156,368	427,751



Program Participation Requirements

Intended program participants are business and government customers of DP&L that purchase a qualified efficient product from a participating distributor.

Incentives

Incentives are intended to cover the incremental cost associated with moving to equipment with a higher efficiency rating than the available standard efficiency. Incentives may be adjusted at any time, in response to various factors such as customer demand, changing technology, and market price.

Marketing Approach

Marketing methods include publication of program information on the company website, mass media, print literature, bill inserts, inserts in local business journals, presentations at community- and vendor-sponsored events and one-on-one marketing by DP&L major account managers.

Implementation Approach

DP&L and implementation partners will establish partnerships with distributors, oversee the implementation of cooperative advertising and in-store signage, audit distributor outlets to confirm appropriate program policies are being implemented, and track the number of efficient products purchased. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

The following savings estimates have been used for planning purposes. Qualifying measures and associated savings may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	13,200	14,520	15,972	43,692
Summer Peak Demand (MW)	2.5	2.8	3.0	8.3

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, EM&V requirements and emerging technologies.



Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$600,000	\$660,000	\$726,000	\$1,986,000
Marketing & Administrative	\$434,058	\$495,994	\$567,308	\$1,497,360
Total	\$1,034,058	\$1,155,994	\$1,293,308	\$3,483,360

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$2,000,000	\$2,200,000	\$2,420,000	\$6,620,000

Market Transformation Activities

Through the CMIP program, DP&L will communicate the energy and cost-saving benefits of energy-efficient upgrades to business customers. The program will also inform manufacturers, engineers, distributors and retailers about customer demand and preferences for energy-efficient technologies. These efforts, combined with the financial incentives provided by the rebates, will help to increase demand for energy efficient products.

EM&V Plan

The impact evaluation approach for the CMIP program may include site visits/engineering analysis, stakeholder interviews and a cost-effectiveness analysis. Site visits will be utilized to verify measures are installed and operating. Engineering analysis will be used to calculate energy savings. The Ohio TRM and secondary source savings calculations and assumptions will be used as a reference to calculate deemed savings.

The process evaluation may include the following as needed: stakeholder interviews, participant and trade ally telephone surveys. These interviews and surveys will address program processes and procedures, progress on customer and contractor education, and the incentive mechanism effectiveness. These interviews may also address perceived barriers to overcome as well as program successes and future challenges.



Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	3.82
Utility Cost Test (UCT)	8.91
Participant Cost Test (PCT)	5.32
Rate Impact Measure (RIM)	0.77

Small Business Direct Install Program

Program Description

The Small Business Direct Install program (SBDI) provides small non-residential customers with a one-stop option for professionally installed new equipment that reduces energy consumption and demand. Technologies covered in the program include, but are not limited to, energy efficient lighting, variable frequency drives, refrigeration equipment, and other efficiency products and services.

Program Objectives

The objective of the program is to help small business customers overcome the upfront cost hurdle associated with energy efficient technologies. The program is designed to provide simple solutions for business customers who want to operate more efficiently. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sector

The SBDI program is designed for all DP&L business customers with monthly electrical demand under 200 kW. This program allows small customers to have energy-saving equipment installed at a reduced cost.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

The following participation levels have been used for planning purposes. Qualifying measures and participation levels may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.

Incremental Annual Participants				
Measure Category	2017	2018	2019	Total 2017-2019
Participants	238	262	288	788

Program Participation Requirements

Intended program participants are business customers of DP&L with monthly electrical demand of less than 200 kW. This threshold number may change with participation levels.



Incentives

Incentives for energy efficiency retrofit projects in SBDI are generally higher than the Rapid Rebates[®] program. Small business customers generally don't have the time, understanding, or capital necessary to invest in energy efficiency projects. Therefore, the utility bears a significant portion of the equipment and labor costs to upgrade small businesses effectively. Incentives may be adjusted at any time, in response to various factors such as customer demand, changing technology, and market price.

Marketing Approach

Marketing methods include direct phone calls, publication of program information on the company website, mass media, print literature, bill inserts, inserts in local business journals and presentations at community- and vendor-sponsored events.

Implementation Approach

DP&L and implementation partners will establish partnerships with distributors and installers, oversee the implementation of cooperative advertising, and track the number of efficient equipment installations. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

The following savings estimates have been used for planning purposes. Qualifying measures and associated savings may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	5,000	5,500	6,050	16,550
Summer Peak Demand (MW)	1.3	1.4	1.5	4.2

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, EM&V requirements and emerging technologies.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$837,500	\$948,888	\$1,043,776	\$2,830,164
Marketing & Administrative	\$521,713	\$588,864	\$646,186	\$1,756,763
Total	\$1,359,213	\$1,537,752	\$1,689,962	\$4,586,927



Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$2,290,384	\$2,519,422	\$2,771,364	\$7,581,170

Market Transformation Activities

Through the SBDI program, DP&L will assist a traditionally underserved business market by communicating the energy and cost-saving benefits of energy-efficient upgrades to business customers. The program will also inform manufacturers, engineers, distributors and retailers about customer demand and preferences for energy-efficient technologies. These efforts, combined with the financial incentives provided by the rebates, will help to increase demand for energy efficient products.

EM&V Plan

The impact evaluation approach for the SBDI program will include site visits/engineering analysis, stakeholder interviews and a cost-effectiveness analysis. Site visits will be utilized to verify measures are installed and operating. Engineering analysis will be used to calculate energy savings. The Ohio TRM and secondary source savings calculations and assumptions will be used as a reference to calculate deemed savings.

The process evaluation will include the following as needed: stakeholder interviews, participant and trade ally telephone surveys. These interviews and surveys will address program processes and procedures, progress on customer and contractor education, and the incentive mechanism effectiveness. These interviews may also address perceived barriers to overcome as well as program successes and future challenges.

Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	1.34
Utility Cost Test (UCT)	2.72
Participant Cost Test (PCT)	2.03
Rate Impact Measure (RIM)	0.67



Combined Heat and Power

Program Description

Combined Heat & Power (CHP), also known as cogeneration, is the simultaneous production of electricity and heat from a single fuel source. Some benefits of CHP include:

- CHP is more efficient than separate generation of electricity and thermal energy.
- Higher efficiency translates to lower operating costs and reduced emissions.
- CHP can increase power reliability and enhance power quality.
- On-site electric generation can help reduce grid congestion.

CHP rebates can help reduce the payback period for investments in CHP technologies. Qualified projects will receive a rebate based on kWh generated during the first year the project is commissioned and rated design capacity.

Program Objectives

The objective of this program is to support the installation of high efficiency, sustainable and cost effective CHP/WER projects in DP&L's service territory as allowed by Ohio law.

The goal of this program is to provide rebates for CHP/WER systems less than 500 kW on a per customer basis, and which total no more than 4 MW of aggregate installed capacity on an annual basis. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research. As needed, DP&L will work with customers evaluating CHP/WER projects greater than 500 kW and may provide rebates through the custom program or file a reasonable arrangement.

Targeted Customer Sector

Intended program participants are municipal, universities, schools, hospitals and industrial customers with process heating needs within the DP&L service territory. All customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier.

Program Duration

The program will operate through the 2017-2019 plan period.



Estimated Program Participation Levels

Measure	Incremental Annual Participants			Total 2017-2019
	2017	2018	2019	
CHP	2	3	4	9
Total CHP Rebates	2	3	4	9

Program Participation Requirements

All DP&L business and government customers have the opportunity to receive DP&L's CHP rebates. All CHP rebate applications must be submitted while in design phase. CHP projects that are not pre-approved will be ineligible to receive a rebate.

Incentives

CHP rebates can help reduce the payback period for investments in CHP technologies. Qualified projects will receive a rebate based on both system capacity and kilowatt hours generated. Rebates will be limited to 50% of the total design and construction project cost.

Marketing Approach

This program lends itself to a targeted marketing approach since certain types of customers can potentially benefit from CHP/WER. In addition, DP&L will work with CHP/WER vendors as an additional marketing channel to targeted customers. Promotional material will be developed utilizing readily available information from the State of Ohio, U.S. Department of Energy, U.S. Environmental Protection Agency and the Midwest CHP Technical Assistance Partnership, among others.

Implementation Approach

DP&L intends to reach out to large customer groups for potential opportunities as well as work with CHP/WER developers who may be interested, if customer interest is insufficient. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

	Incremental Annual Savings			Total 2017-2019
	2017	2018	2019	
Energy (MWh)	6,000	7,500	9,000	22,500
Summer Peak Demand (MW)	0.8	1.0	1.2	3.0



Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$440,000	\$535,000	\$630,000	\$1,605,000
Marketing & Administrative	\$71,095	\$71,728	\$72,380	\$215,203
Total	\$511,095	\$606,728	\$702,380	\$1,820,203

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$1,750,674	\$2,188,342	\$2,626,011	\$6,565,027

Market Transformation Activities

The cost to have a study performed to analyze if CHP/WER is a viable generation option can be a barrier for customers. The DP&L Energy Audit Program provides up to \$10,000 to subsidize the cost of a CHP Feasibility Study and encourage the implementation of CHP projects.

EM&V Plan

Evaluations under this program will require a broad range of activities which may include, but not limited to, the following: database review, stakeholder interviews, participant surveys, site visits/engineering analysis, and cost effectiveness analysis.

The database will be reviewed to assure appropriate data are being collected. Site visits will be utilized to verify measures are installed and operating. Engineering analysis will be used to calculate energy savings and to develop effective measurement strategies for average total system efficiencies over the annual period to determine payment eligibility.

The process evaluation will include the following as needed: stakeholder interviews, participant and trade ally telephone surveys. These interviews and surveys will address program processes and procedures, progress on customer and contractor education, and the incentive mechanism effectiveness. These interviews may also address perceived barriers to overcome as well as program successes and future challenges.



Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	2.34
Utility Cost Test (UCT)	8.68
Participant Cost Test (PCT)	3.16
Rate Impact Measure (RIM)	0.67

Mercantile Self Direct Rebates

Program Description

The Non-Residential Mercantile Self-Direct program allows mercantile customers who have successfully identified and documented savings from energy efficiency projects on a rolling 3-year historical basis to apply for a one-time incentive payment or an exemption from the Energy Efficiency Rider (EER). DP&L will implement this program in accordance with Ohio law and PUCO rules.

Program Objectives

The objective of the program is to allow mercantile customers the ability to commit energy efficiency projects for integration toward DP&L's energy efficiency compliance benchmarks.

Targeted Customer Sector

This self-direct program is available to customers who consume 700,000 kWh or more per year or are part of a regional or national account and who commit their demand and energy savings to be integrated into DP&L's energy efficiency programs. All mercantile customers taking delivery service from DP&L are eligible for this program regardless of their choice of generation supplier.

Program Duration

This program is a continuing program and is designed to run through the duration of the PUCO mercantile self-direct program. DP&L will implement this program as Ohio law and PUCO rules permit.

Estimated Program Participation Levels

The following participation levels have been used for planning purposes. Qualifying measures and participation levels may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.

Incremental Annual Participants (Applications filed with PUCO)				
Measure Category	2017	2018	2019	Total 2017-2019
One-time incentive payments	17	14	13	44

Program Participation Requirements

Business and government customers may purchase any brand of equipment from any supplier they choose, as long as the equipment is new and meets the eligibility requirements. Equipment must use electricity as the fuel source and be replacing



existing equipment or be installed as part of a retrofit project. Projects receiving a one-time incentive are required to conform to the measure eligibility requirements of the Rapid Rebates[®] and/or Custom Rebate programs.

Incentives

Per Case No. 10-834-EL-EEC, the one-time incentive payments will not exceed 50% of the total project cost. EER exemption requests are based on the percentage of demand and energy saved versus the overall customer demand and energy consumed. The EER exemption is proposed to last as long as the percentage of savings achieved by the customer exceeds the legislated demand and/or energy targets. Customers may participate as an individual facility or have the option to aggregate all facilities into a single application. All applications are filed at the PUCO individually and reviewed on a case-by-case basis. All mercantile self-direct applications must be approved by the PUCO prior to taking effect.

Marketing Approach

Marketing methods include presentations at community- and vendor-sponsored events, one-on-one marketing by DP&L major account managers, and the utilization of a Channel Partner network. Channel Partners are contractors, engineers and distributors with energy efficiency experience. They have participated in DP&L rebate workshops and are familiar with using DP&L rebate programs to help customers save money. Channel Partners are viewed as an invaluable third party “marketing extension” of DP&L’s internal group of program managers. They have direct contact with customers on a daily basis and can influence the customer’s purchasing decisions.

Implementation Approach

DP&L plans to continue to implement and manage the Mercantile Self-Direct program with internal staff. Implementing the program in-house strengthens DP&L employee knowledge of energy efficiency programs and technologies. It also provides DP&L with the opportunity to build relationships with contractor networks and customers, leading to quality customer service. From time to time, DP&L may evaluate this internal implementation approach based on program volume and required technical knowledge and expertise. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

The following savings estimates have been used for planning purposes. Qualifying measures and associated savings may change as a result of technology, changing codes and standards, EM&V results, and customer and supplier feedback.



Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	8,822	7,940	7,146	23,908
Summer Peak Demand (MW)	1.0	0.9	0.8	2.7

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, EM&V requirements and emerging technologies.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$637,479	\$573,731	\$516,358	\$1,691,568
Marketing & Administrative	\$112,837	\$103,597	\$102,252	\$318,686
Total	\$750,316	\$677,328	\$618,610	\$2,046,254

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	\$4,291,914	\$3,862,723	\$3,476,451	\$11,631,088

Market Transformation Activities

Through the Mercantile Self-Direct program, DP&L will communicate the energy and cost-saving benefits of energy-efficient upgrades to business customers. The program will also inform manufacturers, engineers, distributors and retailers about customer demand and preferences for energy-efficient technologies. Combined with financial incentives, these activities will help to strengthen demand for energy efficient products.

EM&V Plan

DP&L administers the Mercantile Self Direct program in-house. A third-party auditor may be utilized to verify measures are installed and operating. Engineering analysis will be used to calculate energy savings. The Ohio TRM and secondary source savings calculations and assumptions will be used as a reference to calculate deemed savings.



Cost Effectiveness Results

Benefit-Cost Test	2017-2019 Ratio
Total Resource Cost (TRC)	0.92
Utility Cost Test (UCT)	5.37
Participant Cost Test (PCT)	1.30
Rate Impact Measure (RIM)	0.66

Cross Sector Programs

Programs Overview

The following pages contain plans for programs that impact all customer classes. These plans are intended to be general implementation guidelines as opposed to specific and detailed operating plans. DP&L has learned through its previous experience that a level of implementation flexibility needs to be maintained to allow for necessary program adjustments.

Given the unique nature of the cross-sector programs, elements such as expected participation and savings are not included. Further, the transmission and distribution infrastructure and Smart Grid sections are included as recognition that Ohio law allows savings associated with these projects to be counted toward compliance benchmarks.

Additional information regarding the past implementation of existing programs may be found in DP&L's annual energy efficiency and demand reduction/response portfolio status reports.⁵

The following are the cross-sector programs:

- Customer Education
- Pilot Program
- Transmission & Distribution Infrastructure Improvements
- Smart Grid
- Non-Programmatic Savings

If during the time period of the proposed Program Portfolio, DP&L institutes Transmission and Distribution Infrastructure Improvements and Smart Grid programs, DP&L is requesting authority to count the savings generated by these initiatives pursuant to R.C. §4928.66(A)(2)(d)(i)(IV) and (II), respectively. The aforementioned Revised Code provisions permit utilities to count energy efficiency savings generated by transmission and distribution infrastructure improvements that reduce line losses and Smart Grid investment programs, provided that such programs are demonstrated to be cost-beneficial toward compliance benchmarks.

⁵The most recent portfolio status report is PUCO Case No. 16-0851-EL-POR.



Customer Education

Program Description

Customer education will be a broad based mass communications effort to promote the value of energy efficiency, and, at the same time, to provide a general level of marketing support for DP&L's programs. Overall messages communicated to customers may include energy efficiency saves customers money, energy efficiency can increase comfort, and energy efficiency is good for the environment. DP&L will use a variety of mass communication channels to reach customers including television, print, the web, and promotional events. This effort may include providing customers with additional educational information through DP&L's web site, dpandl.com.

Program Objectives

The Customer Education program is designed to communicate the value of energy efficiency and increase the awareness of available energy efficiency programs. The program will also provide a general level of program marketing support, helping to promote the continued expansion of customer participation in energy efficiency programs.

Targeted Customer Sector

This program is designed to reach all customers taking delivery service from DP&L, regardless of their choice of generation supplier.

Program Duration

This program is designed to run through the duration of this portfolio plan.

Estimated Program Participation Levels

Measure	Incremental Annual Participants			Total 2017-2019
	2017	2018	2019	
N/A	N/A	N/A	N/A	N/A

Program Participation Requirements

N/A

Incentives

N/A



Marketing Approach

DP&L will utilize a variety of marketing and communication channels that may include mass media, the web, news releases, bill inserts, DP&L's web site, and promotional events.

Implementation Approach

The education and outreach activities will be coordinated by DP&L's Energy Programs staff while leveraging additional company resources such as Corporate Communications. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

Due to the educational nature of this program, there are no savings goals.

Program Budgets

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions and general program participation levels.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	N/A	N/A	N/A	N/A
Marketing & Administrative	\$1,200,000	\$1,207,500	\$1,215,375	\$3,622,875
Total	\$1,200,000	\$1,207,500	\$1,215,375	\$3,622,875

Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	N/A	N/A	N/A	N/A

Market Transformation Activities

This program helps to transform the market by educating customers about the value of energy efficiency and the opportunity to make lasting changes to decrease their energy usage. This, in turn, will help drive customer actions toward energy efficiency and increase the demand for energy efficient products.

EM&V Plan

Due to the educational nature of this program and the fact that no savings are claimed, there is no evaluations, measurement and verification plan.



Cost Effectiveness Results

Due to the educational nature of this program and the fact that no savings are claimed, cost effectiveness tests are not performed at the program level. However, the costs associated with customer education are included in the cost effectiveness tests performed for the portfolio as a whole.

Pilot Program

Program Description

Pilot programs are intended to allow DP&L the flexibility to research or pilot programs to test their feasibility for cost-effective savings and potential inclusion in future portfolio plans. Pilot programs executed under the 2013-2016 portfolio plan approved in Case No. 13-833-EL-POR included:

- Appliance Rebates (Residential)
- Energy Savings Kits (Residential)
- Small Business Direct Install (Non-Residential)
- Notched V-Belts (Non-Residential)

Program Objectives

The objective of the Pilot program is to develop and deploy new opportunities as they arise. Results of pilot programs may also inform mid-stream adjustments to the current plan programs as needed. Implementation plans and pilot program results will be shared with the DP&L Energy Efficiency Collaborative. Savings estimates will be calculated in partnership with program implementers and evaluators, and may be influenced by codes and standards, calculations from the Ohio Technical Reference Manual, and ongoing evaluations research.

Targeted Customer Sectors

The Pilot program is intended to cover all DP&L customer segments, both residential and business. All customers taking delivery service from DP&L will be eligible for participation in pilot programs regardless of their choice of generation supplier.

Program Duration

DP&L's ability to deploy pilot programs will begin upon portfolio approval and run through the duration of this portfolio plan.

Estimated Program Participation Levels

Estimated participation levels will be dependent on the specific pilot programs being implemented.

Program Participation Requirements

Program participation requirements will be dependent on the specific pilot programs being implemented.



Incentives

Incentives will vary based on the programs being implemented.

Marketing Approach

The marketing approach will be dependent on the pilot programs being implemented.

Implementation Approach

Pilot programs will be screened for implementation based on a variety of factors including:

- Customer demand/participation levels
- Savings potential
- Estimated cost
- Channel Partner engagement
- Collaborative input
- Non-energy benefits

DP&L may work with one or more third-party vendors, which will serve as an extension of the utility, to help implement this program.

Savings Targets

Specific programs are not yet planned and as a result, it is not possible to project energy and demand savings.

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	N/A	N/A	N/A	N/A
Summer Peak Demand (MW)	N/A	N/A	N/A	N/A



Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, participation levels, and EM&V requirements.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Incentive	\$905,425	\$929,533	\$955,387	\$2,790,345
Marketing & Administrative	\$388,040	\$398,371	\$409,452	\$1,195,863
Total	\$1,293,465	\$1,327,904	\$1,364,839	\$3,986,208

Participant Costs

Participant costs will be dependent on the programs being implemented.

Market Transformation Activities

Market transformation activities will be dependent on the programs being implemented.

EM&V Plans

EM&V plans will be dependent on the programs being implemented.

Cost Effectiveness Results

Cost effectiveness results will be dependent on the programs being implemented. In the early years of a pilot program, it is possible that a pilot program will not be cost effective in its initial stages of delivery due to start up costs.



Transmission & Distribution Infrastructure Improvements

Program Description

In the discussion of Ohio's energy efficiency and demand benchmarks, Ohio Revised Code Section 4928.66(A)(2)(d)(i)(IV) provides, in part, "Programs implemented by a utility may include transmission and distribution infrastructure improvements that reduce line losses."

Consistent with this provision, DP&L may undertake various infrastructure improvements that reduce line losses and count the savings toward its statutory benchmarks as a part of its overall compliance efforts. Savings will be reported in its annual energy efficiency and demand reduction/response portfolio status report. However, DP&L is not seeking to recover transmission and distribution program costs through the Energy Efficiency Rider. DP&L is including the infrastructure program in this portfolio plan to note that it may be reporting savings annually and counting the savings toward its benchmarks.

In addition to energy savings, these projects can produce a number of ancillary benefits such as:

- Strengthening reliability for customers as older equipment is replaced.
- Increasing the available capacity on the existing transmission and distribution system to serve customers.
- Realizing energy savings without various external costs, such as program marketing, required of traditional energy efficient programs.

DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

EM&V Plan

The evaluation, measurement and verification of the savings related to each project will be conducted by DP&L's independent evaluations consultant. Given the unique nature of the projects, DP&L will work with the independent evaluator to develop an appropriate evaluations plan. Depending on the project, the plan could include independent verification of completed work, engineering models to verify savings and supplemental metering. The results will be included in the independent evaluator's report which is submitted with DP&L's annual portfolio status report.



Smart Grid

Program Description

In the discussion of Ohio's energy efficiency and demand benchmarks, Ohio Revised Code Section 4928.66(A)(2)(d)(i)(II) provides, in part, "Programs implemented by a utility may include smart grid investment programs, provided that such programs are demonstrated to be cost beneficial."

Consistent with this provision, DP&L reserves the ability to count savings from smart grid-enabled initiatives if DP&L were to file and gain approval from the PUCO to pursue a plan to invest in smart grid technologies. Savings from smart grid-enabled initiatives would be reported in its annual energy efficiency and demand reduction/response portfolio status report. However, DP&L is not seeking to recover smart grid-enabled initiatives through the Energy Efficiency Rider.

Savings can be generated as a result of a number of different types of smart grid-enabled initiatives which could include:

- An Energy Web Portal
- Enhanced Home Energy Reports
- Time-of-Use Rates
- Conservation Voltage Reduction
- Volt-Var Optimization

Specific smart grid-enabled initiatives would be pursued only if DP&L were to file and gain approval of a smart grid plan. Therefore, DP&L is not addressing specific programs, budgets or savings estimates in this energy efficiency portfolio plan.

DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

EM&V Plan

The evaluation, measurement and verification of the savings related to each project will be conducted by DP&L's independent evaluations consultant. Given the unique nature of the projects, DP&L will work with the independent evaluator to develop an appropriate evaluations plan. Depending on the project, the plan could include independent verification of completed work, engineering models to verify savings and supplemental metering. The results will be included in the independent evaluator's report which is submitted with DP&L's annual portfolio status report.



Non-Programmatic Savings

Program Description

In the discussion of Ohio's energy efficiency and demand benchmarks, Ohio Revised Code Section 4928.66(A) and (B) provide, in part, the PUCO "shall count and recognize compliance" for both

- "Energy efficiency savings and peak demand reduction achieved by actions taken by customers or through electric distribution utility programs;" and
- "Energy efficiency savings and peak demand reduction achieved on and after the effective date of S.B. 310 of the 130th general assembly shall be measured on the higher of an as found or deemed basis, except that, solely at the option of the electric distribution utility, such savings and reduction achieved since 2006 may also be measured using this method."

Consistent with this provision, DP&L may implement a Non-Programmatic Savings program to account for customer efficiency efforts undertaken outside of the utility-administered programs. This will include employing a variety of methodologies to collect customer and market information, including but not limited to: surveying customer, retailers and trade allies; market research; billing analyses; site verifications and other evaluation, measurement and verification activities

Program Objectives

The objective of the program is to quantify energy efficiency improvements occurring in the DP&L territory, beyond those savings recorded by other DP&L programs, and integrating the resulting savings toward compliance with energy efficiency benchmarks as permitted by Ohio law.

Targeted Customer Sector

This program will consider potential savings from all customers taking delivery service from DP&L, regardless of their choice of generation supplier.

Program Duration

This program is designed to run through the duration of the portfolio plan.

Estimated Program Participation Levels

N/A



Program Participation Requirements

Customers do not participate in this program. By its nature, it is designed to capture savings associated with non-participants.

Incentives

N/A

Marketing Approach

N/A

Implementation Approach

DP&L plans to will use an independent evaluations firm to quantify the savings through a variety of market research methodologies. DP&L may work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Savings Targets

Given that this program is newly permitted by Ohio law, DP&L is not including an estimate of the potential savings.

Incremental Annual Savings				
	2017	2018	2019	Total 2017-2019
Energy (MWh)	NA	NA	NA	NA
Summer Peak Demand (MW)	NA	NA	NA	NA

Program Budget

The following budget estimates have been used for planning purposes. DP&L may adjust program budgets as a result of market conditions, EM&V requirements and emerging technologies.

Incremental Annual Budget				
	2017	2018	2019	Total 2017-2019
Marketing & Administrative	\$1,400,000	\$1,300,000	\$1,300,000	\$4,000,000
Total	\$1,400,000	\$1,300,000	\$1,300,000	\$4,000,000



Participant Costs

Incremental Annual Participant Costs				
	2017	2018	2019	Total 2017-2019
Participant Costs	NA	NA	NA	NA

Market Transformation Activities

N/A

EM&V Plan

The evaluation, measurement and verification of the savings related to this program will be conducted by DP&L's independent evaluations consultant. Given the unique nature of the initiative, DP&L will work with the independent evaluator to develop an appropriate evaluations plan. The results will be included in the independent evaluator's report which is submitted with DP&L's annual portfolio status report.

Evaluation Measurement & Verification

EM&V History and Overview

Effective evaluation, measurement and verification (EM&V) play an important role in a quality energy efficiency portfolio. EM&V activities ensure that reported savings are verified, energy and demand calculations are valid, program delivery is effective, customers are satisfied and the overall portfolio is cost-effective. DP&L will work with a third-party vendor, which will serve as an extension of the utility, to help implement this program.

Through a request-for-proposal (RFP) process, DP&L selected Cadmus to conduct independent EM&V for its current portfolio of programs. To date, Cadmus has conducted EM&V and produced a report for each of the years 2009 through 2015. DP&L has submitted the Cadmus reports as a part of its annual energy efficiency and demand-reduction portfolio status reports.

Evergreen Economics (the independent statewide evaluator for program years 2009-2013) has reviewed the 2009 through 2013 Cadmus reports. In its review of the 2011 Cadmus report, Evergreen states:

“In general, we found that the Cadmus evaluation report adheres to industry best practices for evaluating DP&L’s program offerings. The report is of high quality and provides details necessary to substantiate the savings estimates provided. We have a high level of confidence in this evaluation research and do not have any specific recommendations for changes to the DP&L’s PY2011 reported savings.”⁶

Likewise, in its review of the 2012 and 2013 Cadmus reports, Evergreen states:

“In general, we found that the Cadmus evaluation report adheres to industry best practices for evaluating DP&L’s program offerings. The report is comprehensive and provides the details necessary to rely on the savings estimates provided. We have a high level of confidence in this evaluation research and do not have any specific recommendations for changes to the DP&L’s 2012/2013 reported savings.”⁷

DP&L is pleased with this positive feedback and believes it is establishing a solid record of program implementation accompanied by an appropriate level of EM&V. Going forward, DP&L plans to follow the same EM&V process that resulted in the positive review by the Independent Statewide Evaluator.

DP&L’s EM&V APPROACH

⁶PUCO Case No. 13-1027-EL-UNC, Evergreen Economics “Report of the Ohio Independent Evaluator,” page 30.

⁷PUCO Independent Evaluator Reports 2012PY and 2013PY. Submitted to the PUCO but not filed.



DP&L's past and current approach to EM&V stands on four pillars:

1. Evaluation is integral to the overall portfolio and is best organized as an adaptive process;
2. Evaluation at the program and measure level are prioritized based on several factors such as uncertainty and available budget;
3. Evaluations are based on industry-standard methods and well-established protocols; and
4. Evaluation plans are flexible to accommodate portfolio changes.

Pillar One: Evaluation is Integrated

DP&L believes that it is important to work with an independent evaluator throughout the entire life cycle of an energy efficiency program and the portfolio as a whole. This approach calls for the independent evaluator to be involved at various stages in a program or portfolio's life cycle, including planning, implementation and post-implementation assessment. As shown in the figure below, this adaptive approach allows DP&L to benefit from its evaluator's experience, receive timely feedback and make adjustments throughout the life of the program.

Ongoing Evaluations Input Helps Ensure Programs Are Implemented Effectively

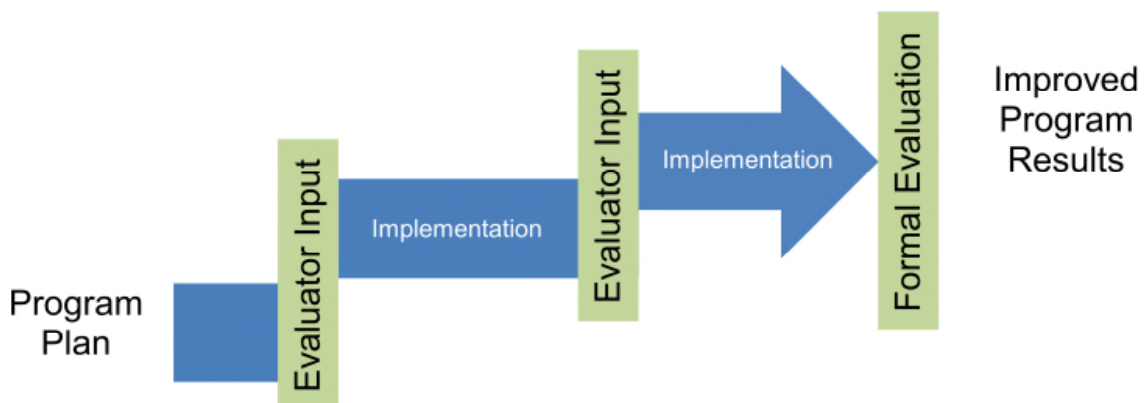


Figure 8 Ongoing Evaluations Process

This approach is in direct contrast to the approach commonly taken in a previous era of energy efficiency where the EM&V firm only provided feedback after a program had been implemented. By that time, the program may have ended or it may have been difficult and costly to make program adjustments. By pro-actively including the independent evaluator throughout the program lifecycle, DP&L believes its programs are stronger and its savings results are more consistent with general industry practices.

Pillar Two: Evaluation Tasks are Prioritized

Evaluation plans and objectives at the program and measure level are prioritized to allocate evaluation resources based on the following:



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Case No(s). 16-0649-EL-POR, 16-1369-EL-WVR

Summary: Application Application of The Dayton Power and Light Company for Approval of Its Energy Efficiency and Peak Reduction Program Portfolio Plan electronically filed by Mr. Jeremy M. Grayem on behalf of Dayton Power & Light