



The Benefits of Pennsylvania's Act 129 Energy Efficiency Programs and the Potential Losses of Allowing Users to Opt Out

Executive Summary

In 2008, Pennsylvania's Act 129 established an Energy Efficiency Resource Standard, which requires its seven largest electric distribution companies (EDCs) to implement energy efficiency and conservation (EE&C) plans to reduce the amount of electricity consumed by customers. Energy efficiency programs are typically one-quarter to one-third less expensive than building a new power source and, thus, help keep electricity rates and bills low. Ratepayers pay for these programs as part of their electric bill – just as they would pay for a new power plant.

Act 129 is implemented in three progressively more ambitious phases, and Pennsylvania utilities recently completed plans to implement Phase III. An independent statewide evaluation of the EE&C programs found that Pennsylvania's Phase II (2008-2013) commercial and industrial (C&I) programs were highly successful. The programs:

- Saved 1,337,127 MWh/year total (equivalent to the energy it takes to power 99,229 homes for a full year). Our calculations find this will save Pennsylvanian ratepayers over \$95 million on their electricity bills annually.¹
- Trailing only the residential sector in statewide savings at the sector level.²
- Accounted for the highest sector savings for two utilities, PPL and Duquesne.
- Resulted in 223 MW of peak demand savings in Phase II (equivalent to a small power plant).

The programs offered under Act 129 save Pennsylvania bill payers energy and money, and make Pennsylvania businesses more competitive. In addition, the federal Department of Energy recently reported that energy efficiency supports 62,431 jobs in Pennsylvania. In fact, despite economy-wide ups and downs, Pennsylvania's energy efficiency industry has seen an average annual job growth rate of 7.5% year after year, for the past 7 years.³

Opt Outs = Lost Bill Savings

In 2016, some members of the Pennsylvania state legislature proposed a bill to allow large customers to opt out of these energy efficiency programs. A similar bill is expected in 2017. If large customers are allowed to opt out, they would miss out on large potential cost savings – and they would not be required to pay their fair share for energy efficiency investments that benefit the entire state. This would negatively affect the whole portfolio of programs and create

¹ Based on Energy Information Administration (EIA) data that the average price of electricity to industrial end users in PA was 7.11 cents/kWh in Jan 2016.

² The programs addressed four sectors: residential, C&I, government and non-profit, and low-income.

³ U.S. Department of Energy, January 2017, "U.S. Energy and Employment Report," (https://energy.gov/sites/prod/files/2017/01/f34/2017%20US%20Energy%20and%20Jobs%20Report_0.pdf).



inequity among program sectors. In Phase II, for example, the C&I programs resulted in cumulative demand savings of 223 MW (equivalent to a small power plant), which benefited all ratepayers by helping to reduce system costs and avoid outages. By removing C&I contributions, less funds would be available to pay for energy efficiency investments – and the potential projects and associated savings would be slashed.

Independent Evaluator Report Findings

In 2017, an independent program evaluator, released its final report for Pennsylvania’s EE&C programs.⁴ Statewide, Pennsylvania’s C&I programs achieved a total of 1,337,127 annual megawatt-hours in Phase II – equivalent to the energy it takes to power 99,229 homes for a full year. The C&I sector achieved the second-most energy savings, following the residential sector. For two utilities, PPL and Duquesne, the C&I sector accounted for the highest sector savings.

TABLE 1 summarizes energy savings for each of Pennsylvania’s seven EDCs by program sector.

TABLE 1. PHASE II VERIFIED GROSS ENERGY SAVINGS BY EDC AND SECTOR – JUNE 1, 2013 THROUGH MAY 31, 2017 (MWH/YEAR)

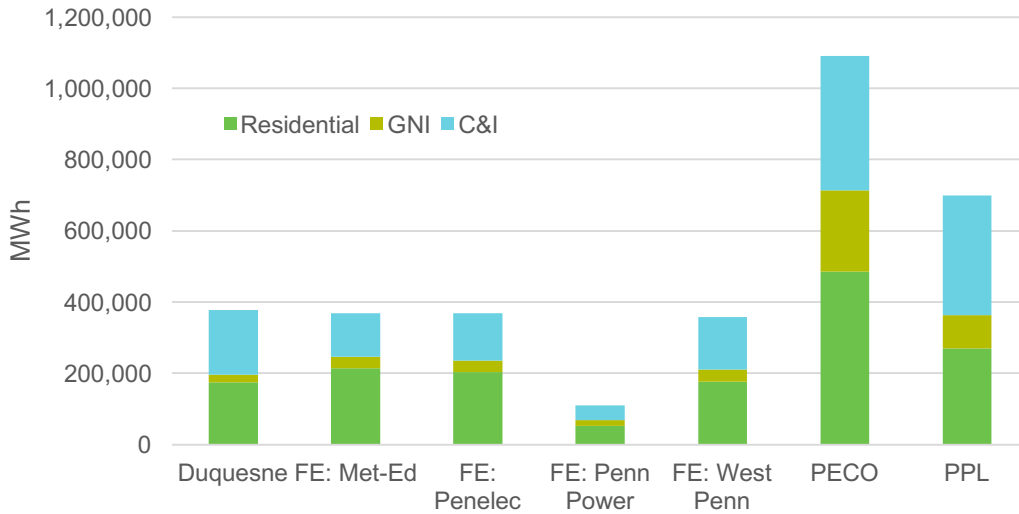
EDC	Residential	Government, Nonprofit, & Institutional (GNI)	Commercial & Industrial
Duquesne	173,723	22,135	181,390
FE: Met-Ed*	213,247	33,657	121,331
FE: Penelec*	203,250	31,964	133,294
FE: Penn Power*	51,422	16,866	41,079
FE: West Penn*	176,463	33,726	147,885
PECO	485,743	227,985	376,776
PPL	270,117	93,248	335,372
Statewide	1,573,965	459,581	1,337,127

*Note: FE is First Energy

⁴ Act 129 Statewide Evaluator Phase II Final Report. Presented to the Pennsylvania Public Utility Commission, Prepared by GDS Associates, Research Into Action, and Apex Analytics. February 28, 2017. (http://www.puc.pa.gov/Electric/pdf/Act129/Act129-SWE_PhaseII_FinalAR.pdf).



FIGURE 1. PHASE II VERIFIED GROSS ENERGY SAVINGS



Figures 2 and 3 show the percentage of energy and demand savings achieved by each program sector at the statewide level in Phase II. The C&I sector achieved the second-most energy and demand savings within Act 129 EE&C programs, nearly on par with residential reductions.

FIGURE 2. ENERGY SAVINGS BY SECTOR

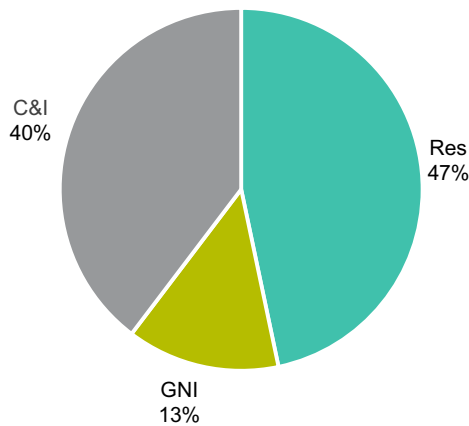
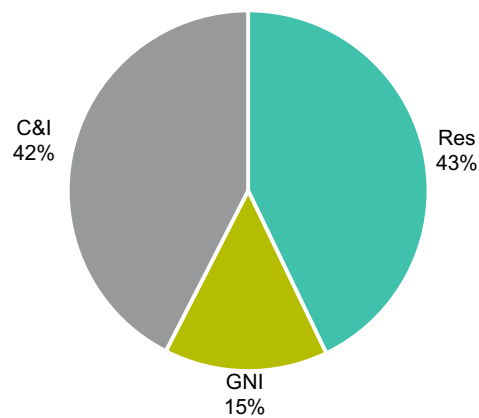


FIGURE 3. DEMAND SAVINGS BY SECTOR



Potential Large User Opt Out

In 2016 the legislature considered a bill to allow large industrial consumers to opt out of these programs, which would reduce available funding and undermine their effectiveness. A similar bill is expected to be introduced in 2017. Opt outs reduce the potential bill savings for all large commercial and industrial customers. Based on Phase II performance, we estimate that if 20% of customers had opted out of these programs, they would have foregone over \$369 million in



bill savings over the lifetime of the measures that would have been installed in Phase II had they remained in the program.

Table 1 highlighted first-year savings. These are the savings that a project funded under the program might provide the year it is installed – even though that same upgrade will be in place for years to come. A more accurate assessment would consider *lifetime* savings –the total energy savings over the effective useful life of all measures installed in the first year.⁵

Table 2 shows potential lost energy and associated bill savings under 20%, 35%, and 45% opt-out scenarios. The table shows the potential lost savings from a hypothetical scenario where customers opted out of the Phase II programs for all three program years in this phase. In the most conservative of these three scenarios (assuming only 20% of participants opt out of all three years of the programs), Pennsylvania’s ratepayers would forego nearly 7.3 million MWh of lifetime energy savings. That is equivalent to over \$369 million in missed bill savings.

TABLE 2. POTENTIAL LOST LIFETIME ENERGY AND BILL SAVINGS IF 20%, 35%, AND 45% OF LOAD OPTS OUT OF PHASE II UTILITY ENERGY EFFICIENCY PROGRAMS

Opt Out Scenario	Lost Lifetime Energy Savings (GWh)	Net Present Value Of Lost Bill Savings (millions \$)
20% Opt Out	7,260	\$369
35% Opt Out	12,705	\$647
45% Opt Out	16,335	\$831

Recommendations

C&I customers currently participating in the EE&C programs or who would like to participate in the future, should urge policy makers to support energy efficiency programs, especially those directed at the commercial and industrial sector, and share their project success stories with state legislators. These programs cut energy costs for program participants and save money for all Pennsylvania ratepayers.

If your company is interested in getting involved in supporting Pennsylvania’s EE&C programs, please contact Alexandra Rekkas at alexandra@dgardiner.com.

⁵ Act 129 Statewide Evaluator Phase II Final Report. Presented to the Pennsylvania Public Utility Commission, Prepared by GDS Associates, Research Into Action, and Apex Analytics. February 28, 2017. (http://www.puc.pa.gov/Electric/pdf/Act129/Act129-SWE_PhaseII_FinalAR.pdf).