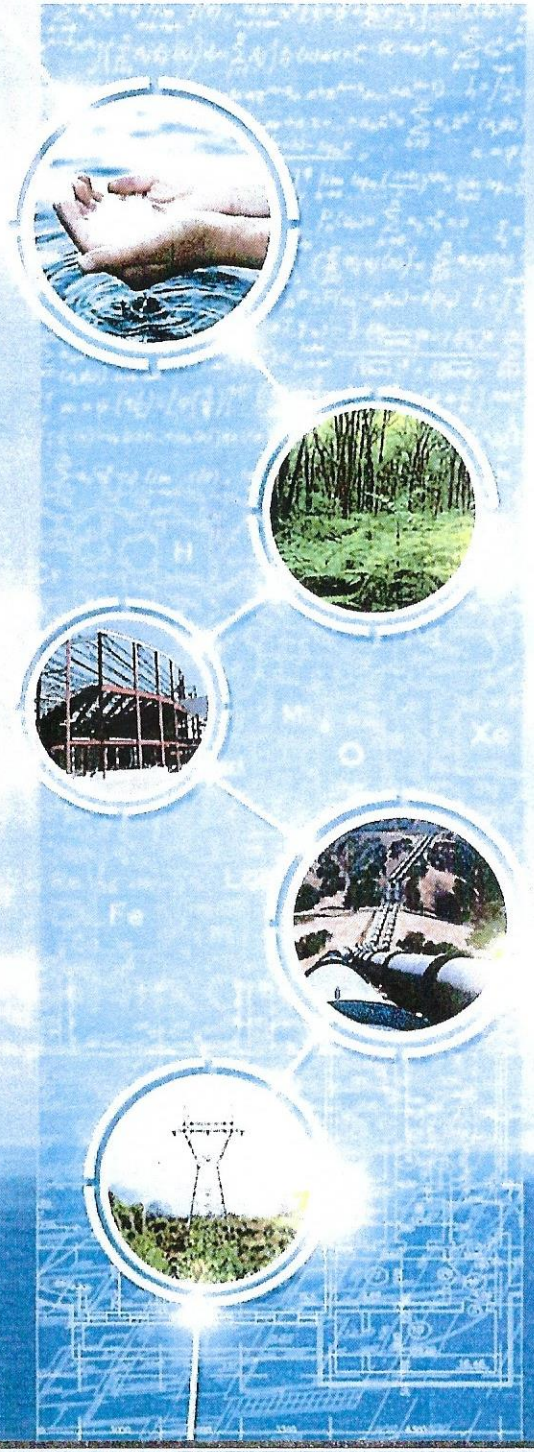


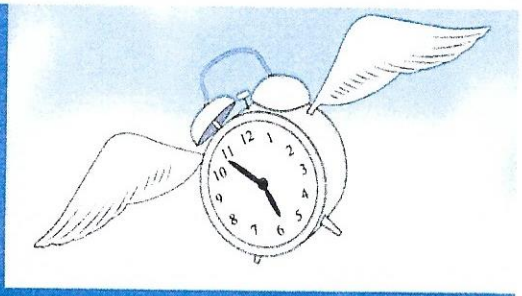
TETRA TECH

DCSEU FY2016
Performance Benchmark Evaluation Results

June 12, 2017

Rich Hasselman, Tetra Tech

TETRA TECH



Agenda

- FY2016 Evaluation Background
- Methods Summary
- Results

FY2016 Evaluation Background

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- Evaluation process
  - Began April 3, 2017
  - Final draft delivered by June 28, 2017
- Streamlined approach, focused on Performance Benchmarks
  - Leveraged past evaluation results
  - Utilized FY2016 tracking data
- Two benchmarks are now tracking benchmarks
  - Peak demand (kW savings)
  - Largest energy users
- Cost-effectiveness and acquisition costs included
- Additional look at retail products and track-level historical results

FY2016 Evaluation Methods

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- Energy and demand savings
  - Historical portfolio realization rates
  - Realization rate = savings achieved vs reported
  - Used lowest achieved for kWh, kW, natural gas
  - Applied to FY2016 portfolio-level savings

Metric	FY 2013	FY 2014	FY2015	Lowest Realization Rate
KWh	1.04	0.98	0.94	0.94
kW	1.07	0.92	1.19	0.92
MMBtu	1.0	1.0	1.08	1.0

- Low-income spending levels
  - Track-level adjustments based on FY2015 results
- All other used tracking data from DOEE and DCSEU

FY2016 Benchmark Results

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Benchmark Number	Performance Benchmark	Minimum Performance Target	Maximum Performance Target	FY2016 Verified	Minimum Target Achieved	Maximum Target Achieved
Compensated Performance Benchmarks						
1a	Reduce electricity consumption—MWh	51,845	103,690	74,983	✓	
1b	Reduce natural gas consumption—Mcf	61,521	273,428	106,008	✓	
2	Reduce Cost of Renewable Energy	10%	20%	18%	✓	
4	Low-income housing energy savings - $ spending	$3,520,000	$5,280,000	$5,187,757	✓	
6	Increase number of green-collar jobs (job count)	53	88	104.5	✓	✓
Additional Tracking Performance Benchmarks						
3	Reduce peak demand - kW	2,000	20,000	8,917	✓	
5	Energy savings for largest users = participants > 200k sq ft	30	50	132	✓	✓

Energy Efficiency Acquisition Costs

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- Removes effects of renewable energy spending and savings
- Electricity
  - Costs are similar to PA, lower than MD

Historical Electricity Savings Acquisition Costs

Fiscal Year	DCSEU $/MWh	Pennsylvania $/MWh	Maryland $/MWh
FY2012	$549	-	-
FY2013	$228	-	$271
FY2014	$195	$177	$375
FY2015	$237	$196	$227
FY2016	$167	$163	not yet available

Energy Efficiency Acquisition Costs

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- Natural gas
  - In a range identified by ACEEE in 2012
    - $19 to $59, average of $37

DCSEU Natural Gas Savings Acquisition Costs

Fiscal Year	DCSEU $/MMBtu
FY2012	$152
FY2013	$64
FY2014	$32
FY2015	$44
FY2016	$51

Cost Effectiveness

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- Benefit Cost Ratios from Societal Test
  - Gross Portfolio – 3.5
  - Full costs with realization rates – 3.3
  - Including program free ridership – 2.7
- Remains highly cost-effective

Recommendations

TETRA TECH

- Continue to Monitor Cost Effectiveness
  - Drop in FY2016, though still highly cost effective
  - May reflect a decrease in "low-hanging fruit"
  - Benchmarks more comprehensive than other jurisdictions
- Continue to Monitor Acquisition Costs
  - Electricity aligns with a mature portfolio
    - Multi-year contract may allow for longer term projects to bear fruit
    - Changes in federal light standards will reduce lighting savings
  - Natural Gas within industry range
    - The District has limited opportunity for manufacturing savings
    - Natural gas price decreases limits economic motivation

Recommendations

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- Track solar thermal and solar PV separately
  - Continue to combine for reporting benchmarks
  - PV costs likely to continue decline, more than solar thermal
    - Solar thermal competes best on larger systems
    - Heating water with PV looking more attractive
  - Low-income vs market rate tracks
    - Different cost profiles
    - Market rate likely to grow
  - Provides clarity on overall drivers of program costs

Questions?

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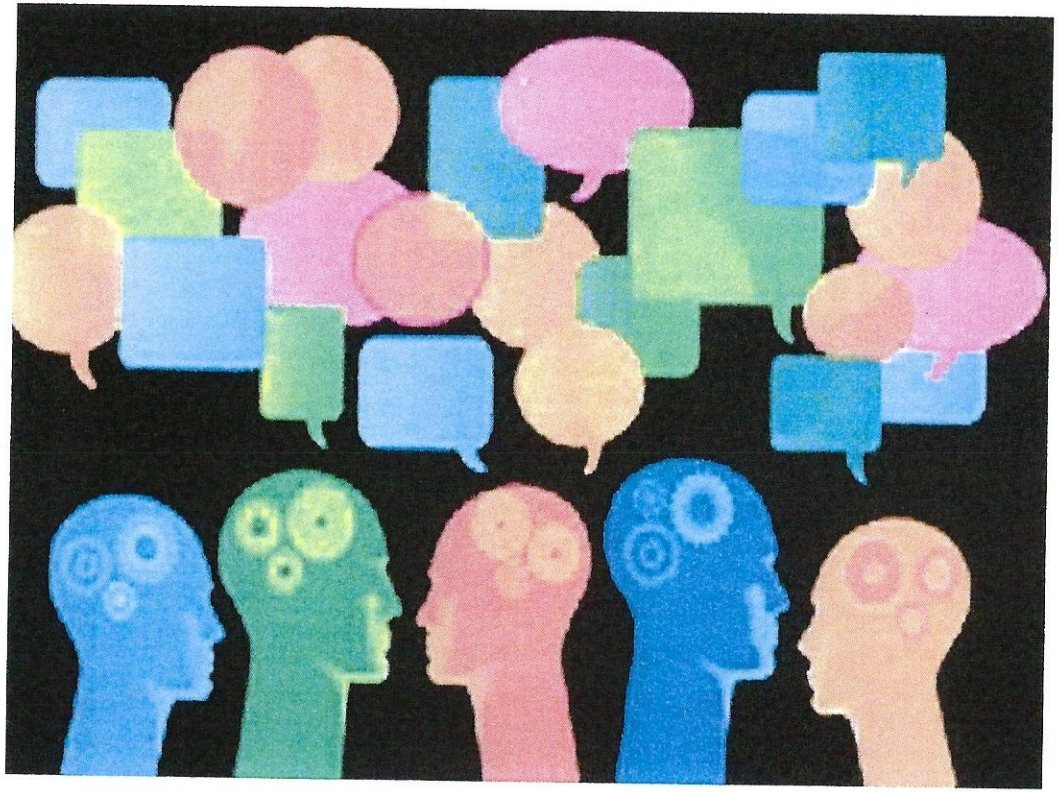

Invoice Category	FY2017 Q1 October 1 - December 31	FY2017 Q2 January 1 - March 31	April 2017	Total
Labor	$ 704,088.00	$ 765,628.00	$ 262,696.00	$ 1,732,412.00
Fringe	$ 264,033.00	$ 287,111.00	$ 98,511.00	$ 649,655.00
Incentives	$ 198,820.00	$ 579,411.00	$ 590,995.00	$ 1,369,226.00
Subcontractor	$ 250,863.00	$ 289,959.71	$ 74,846.00	$ 615,668.71
Materials	$ 7,499.00	$ 39,263.66	$ 20,416.00	$ 67,178.66
Telephone	$ 11,573.00	$ 8,588.36	$ 1,218.00	$ 21,379.36
Internet	$ 5,177.00	$ 5,294.58	$ 1,738.00	$ 12,209.58
Travel	$ 16,992.00	$ 22,531.17	$ 12,624.00	$ 52,147.17
Copying/Printing	$ 1,844.00	$ 6,761.21	$ 9,721.00	$ 18,326.21
Postage/Shipping	$ 1,260.00	$ 1,124.79	$ 119.00	$ 2,503.79
Memberships	$ 28,116.00	$ 24,462.00	$ 2,500.00	$ 55,078.00
Education/Seminars/Conferences	$ 4,044.00	$ 22,596.00	$ 1,075.00	$ 27,715.00
Equipment/Software	$ 48,557.00	$ 11,883.50	$ 3,474.00	$ 63,914.50
Rent/Occupancy	$ 194,381.00	$ 181,372.92	$ 59,578.00	$ 435,331.92
Other Expenses	$ 12,115.00	$ 18,141.11	$ 3,456.00	$ 33,712.11
Allocated Indirect Expenses	$ 166,189.00	$ 210,563.89	$ 106,296.00	$ 483,048.89
Shared Service Support Costs	$ 123,418.00	$ 156,582.57	$ 59,736.00	$ 339,736.57
Operations Fee 4%	$ 81,559.00	$ 105,250.00	$ 52,360.00	$ 239,169.00
Putting Data to Work (Cost Share)	$ 19,106.00	$ 20,360.00	$ -	$ 39,466.00
Total	**$ 2,139,634.00**	**$ 2,756,885.47**	**$ 1,361,359.00**	**$ 6,257,878.47**