

LGEA Presentation

Passaic County Community College

June 29, 2023

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future



INTRODUCTIONS

Passaic County Community College

- Brian Egan
- Steven Hardy
- Susan Gaulden

Schneider Electric

- Sam Ringelberg
- Dan Riggle

NJ Clean Energy Program

- Sarah Walters – LGEA Project Manager
- Moussa Traore – LGEA Technical Manager
- Ryan Knippenberg – LGEA Project Auditor
- Michelle Rossi – ESIP Coordinator (BPU)

AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**asures (ECMs) identified & other recommendations
- Energy Savings Improvement Program (ESIP)
- Energy Efficiency Incentive Programs
- Questions regarding the draft audit report
- Next steps for PCCC

LGEA PROCESS

- Application Approval
- Initial Call
- Facility Interviews
- Audit
- Benchmarking & Analysis
- Draft Reports
- LGEA Presentation
- Final Reports



SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Kitchen Equipment

Utility Consumption:

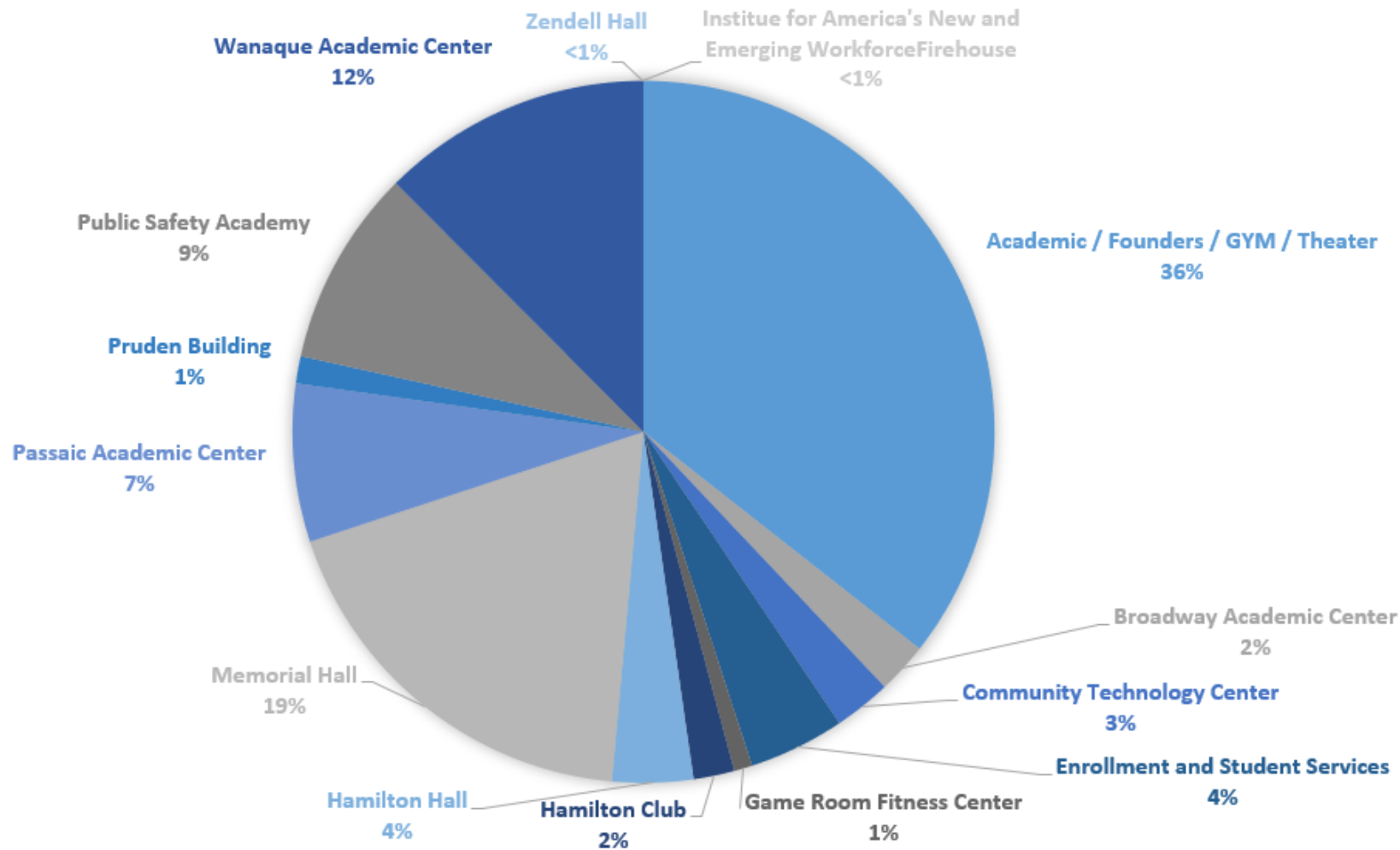
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

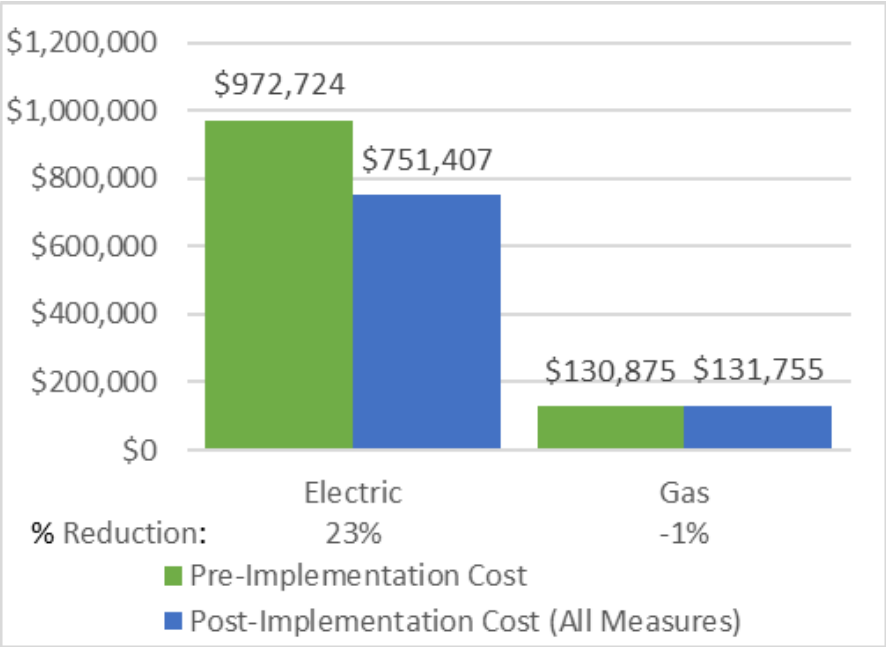
- Academic/Founders Hall, Gym, and Theater
- Hamilton Hall
- Wanaque Academic Center
- Hamilton Club
- Public Safety Academy
- Community Technology Center
- Broadway Academic Center
- Pruden Building
- Passaic Academic Center
- Memorial Hall
- Enrollment and Student Services Center
- Institute for America's New and Emerging Workforce Firehouse
- Zendell Hall

UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

 **ENERGY STAR® Statement of Energy Performance**
LEARN MORE AT energystar.gov

N/A **PCCC - Hamilton Club**
Primary Property Type: Other - Education
Gross Floor Area (ft²): 22,250
Built: 1902
For Year Ending: February 28, 2022
Date Generated: January 19, 2023
ENERGY STAR® Score¹


1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information		
Property Address PCCC - Hamilton Club 32 Church Street Paterson, New Jersey 07504	Property Owner Passaic County College 1 College Blvd. Paterson, NJ 07505 (973) 684-4999	Primary Contact Ryan Egan 1 College Boulevard Paterson, NJ 07505 (973) 684-4999 began@pccc.edu
Property ID: 23316298		

Energy Consumption and Energy Use Intensity (EUI)		
Site EUI 44.1 kBtu/ft²	Annual Energy by Fuel Electric - Grid (kBtu) 375,866 (31%) Natural Gas (kBtu) 605,963 (2%)	National Median Comparison National Median Site EUI (kBtu/ft²) 64.2 National Median Source EUI (kBtu/ft²) 110.4 % Diff from National Median Source EUI -31% Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 65
Source EUI 75.9 kBtu/ft²		

Signature & Stamp of Verifying Professional
I, _____ (Name) verify that the above information is true and correct to the best of my knowledge.
LP Signature: _____ Date: _____
Licensed Professional

() _____


Professional Engineer or Registered Architect Stamp (if applicable)

Site EUI
44.1 kBtu/ft²

Source EUI
75.9 kBtu/ft²

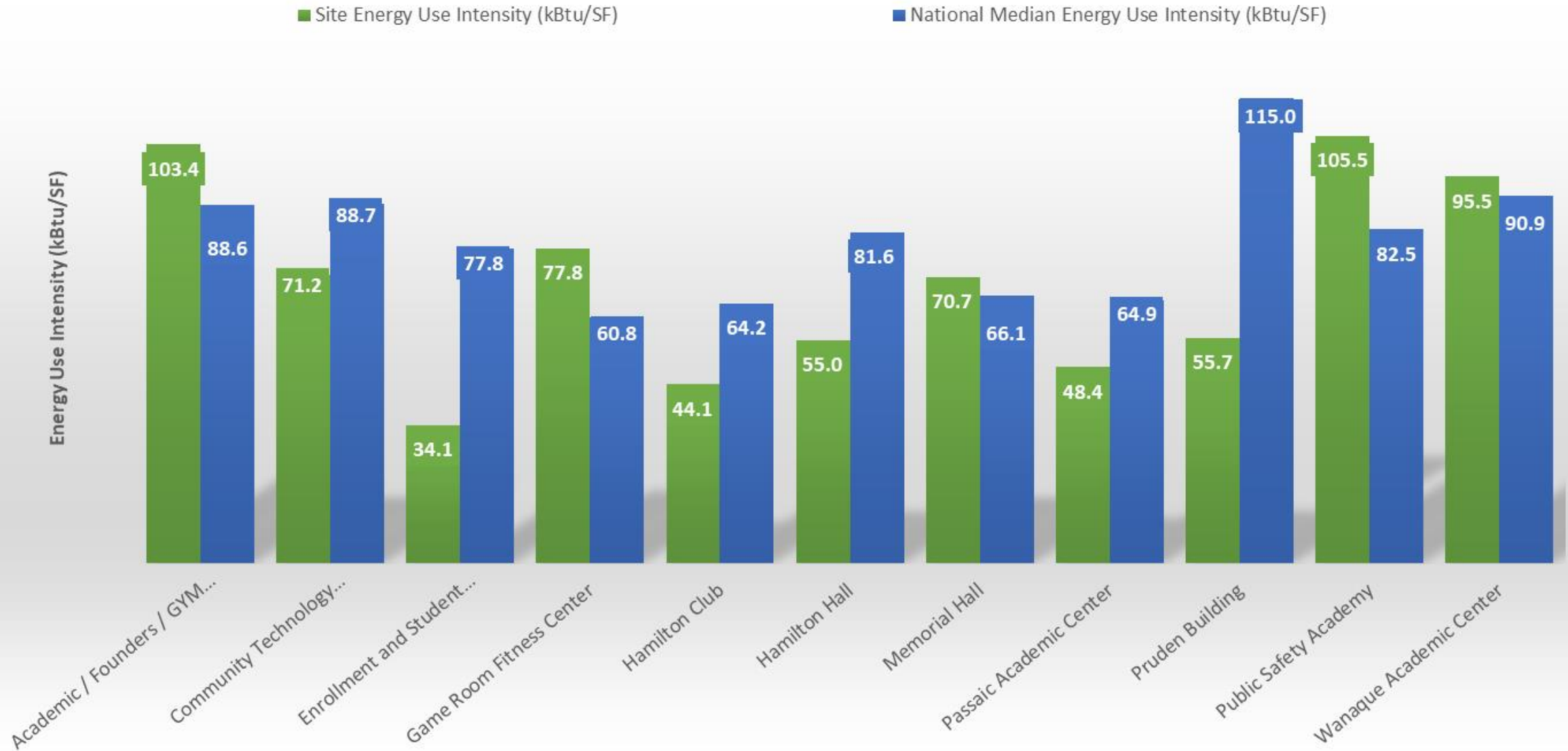
Passaic County Community College	ENERGY STAR® Score
All Buildings	N/A

National Median Comparison

National Median Site EUI (kBtu/ft²)	64.2
National Median Source EUI (kBtu/ft²)	110.4
% Diff from National Median Source EUI	-31%

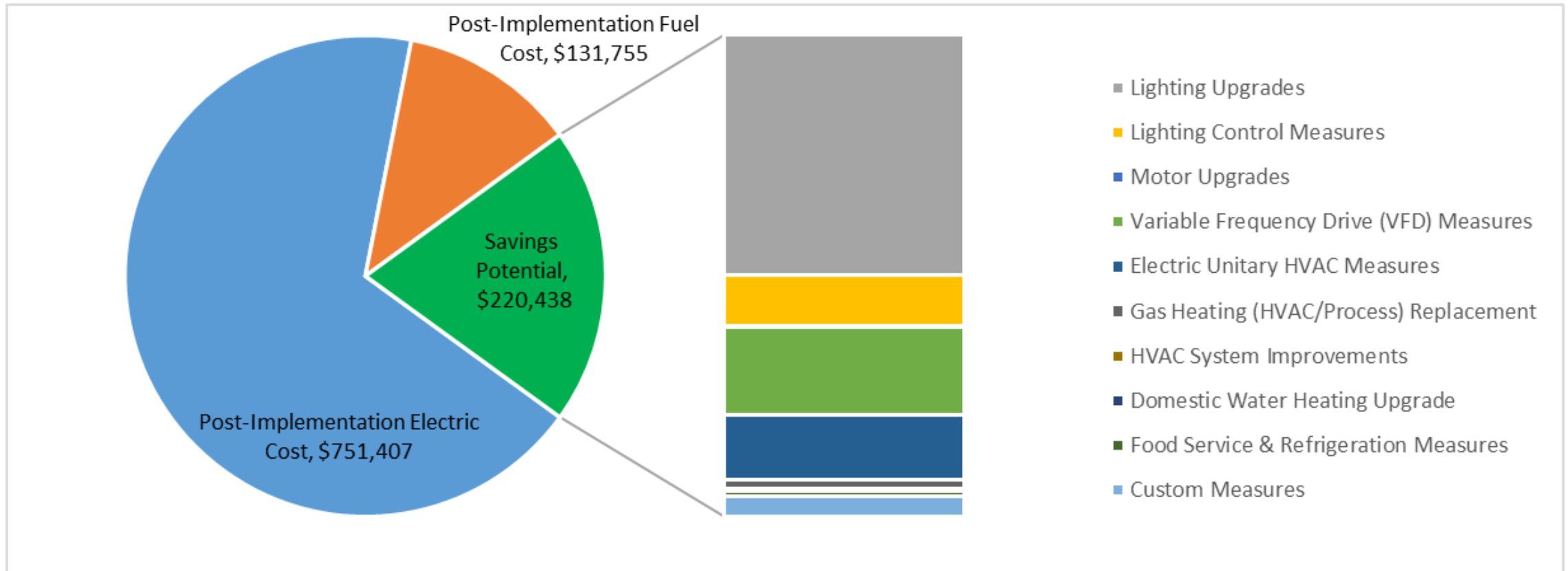
ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

BENCHMARKING



ALL OPPORTUNITIES

Savings Potential



ALL OPPORTUNITIES

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		901,097	190.1	-159.2	\$109,564	\$355,887	\$80,433	\$275,454	2.5	888,757
ECM 1	Install LED Fixtures	70,664	1.4	-0.2	\$8,696	\$40,792	\$5,520	\$35,272	4.1	71,139
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	4,773	3.4	-0.7	\$882	\$6,834	\$1,087	\$5,747	6.5	4,724
ECM 3	Retrofit Fixtures with LED Lamps	825,660	185.4	-158.3	\$99,986	\$308,261	\$73,826	\$234,435	2.3	812,894
Lighting Control Measures		194,407	41.6	-36.9	\$23,751	\$208,700	\$55,630	\$153,070	6.4	191,440
ECM 4	Install Occupancy Sensor Lighting Controls	137,649	33.6	-25.8	\$16,796	\$159,675	\$21,110	\$138,565	8.3	135,594
ECM 5	Install Daylight Dimming/Photocell Controls	230	0.0	0.0	\$30	\$200	\$0	\$200	6.8	232
ECM 6	Install High/Low Lighting Controls	56,528	8.0	-11.2	\$6,926	\$48,825	\$34,520	\$14,305	2.1	55,615
Motor Upgrades		2,982	0.7	0.0	\$385	\$8,917	\$0	\$8,917	23.1	3,002
ECM 7	Premium Efficiency Motors	2,982	0.7	0.0	\$385	\$8,917	\$0	\$8,917	23.1	3,002
Variable Frequency Drive (VFD) Measures		340,232	89.4	0.0	\$40,300	\$481,106	\$33,700	\$447,406	11.1	342,611
ECM 8	Install VFD on Variable Air Volume (VAV) Fans	23,457	6.1	0.0	\$3,000	\$17,540	\$1,400	\$16,140	5.4	23,621
ECM 9	Install VFDs on Constant Volume (CV) Fans	240,494	77.1	0.0	\$28,466	\$208,805	\$29,300	\$179,505	6.3	242,175
ECM 10	Install VFDs on Heating Water Pumps	76,282	6.2	0.0	\$8,835	\$254,761	\$3,000	\$251,761	28.5	76,815
Unitary HVAC Measures		230,276	109.2	88.4	\$29,408	\$771,094	\$38,171	\$732,923	24.9	242,240
ECM 11	Install High Efficiency Air Conditioning Units	228,303	107.1	88.4	\$29,179	\$762,274	\$38,171	\$724,103	24.8	240,253
ECM 12	Install High Efficiency Heat Pumps	1,973	2.1	0.0	\$229	\$8,820	\$0	\$8,820	38.5	1,987

ALL OPPORTUNITIES

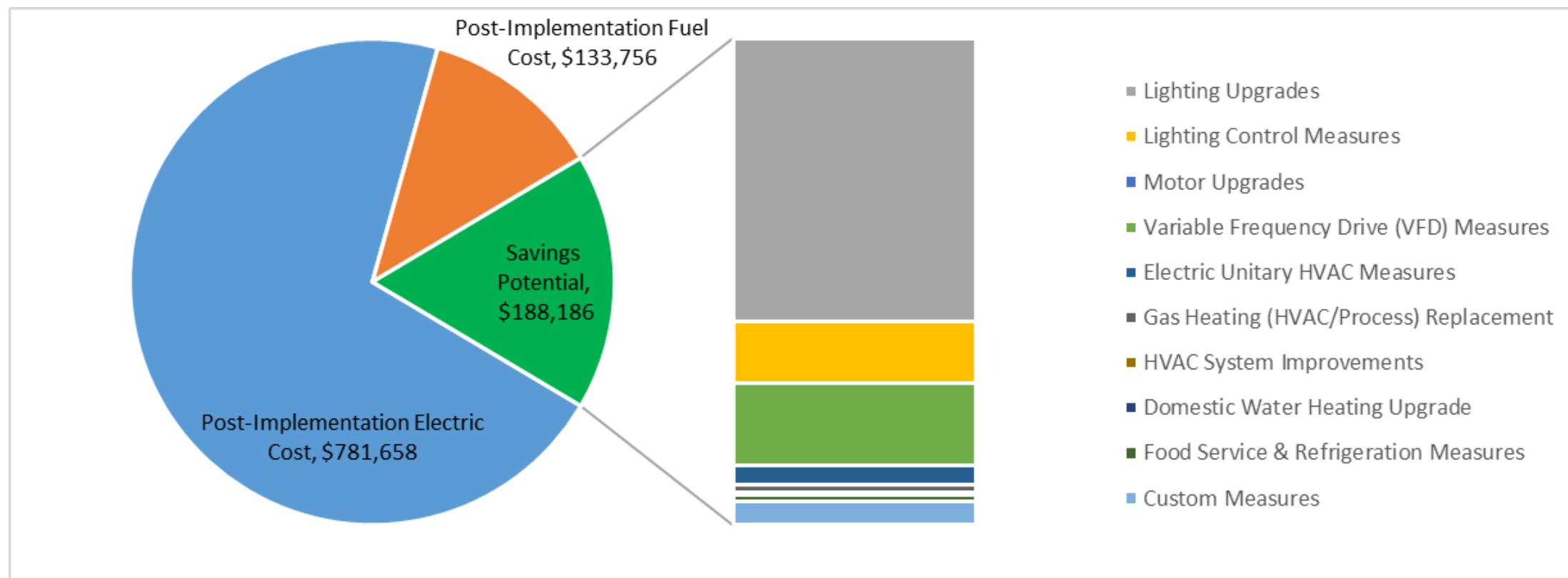
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Gas Heating (HVAC/Process) Replacement		8,586	3.0	387.7	\$4,366	\$82,211	\$4,959	\$77,253	17.7	54,045
ECM 13	Install High Efficiency Hot Water Boilers	0	0.0	35.1	\$441	\$38,867	\$1,859	\$37,008	84.0	4,114
ECM 14	Install High Efficiency Furnaces	0	0.0	113.0	\$913	\$28,377	\$2,500	\$25,877	28.4	13,234
ECM 15	Install High Efficiency Unit Heaters	8,586	3.0	0.0	\$994	\$2,028	\$0	\$2,028	2.0	8,646
ECM 16	Install Infrared Heaters	0	0.0	239.6	\$2,018	\$12,940	\$600	\$12,340	6.1	28,051
HVAC System Improvements		3,057	0.0	30.3	\$677	\$4,752	\$104	\$4,648	6.9	6,632
ECM 17	Implement Demand Control Ventilation (DCV)	1,329	0.0	17.8	\$334	\$4,078	\$0	\$4,078	12.2	3,427
ECM 18	Install Pipe Insulation	1,728	0.0	12.5	\$343	\$674	\$104	\$570	1.7	3,204
Domestic Water Heating Upgrade		1,485	0.0	12.2	\$298	\$746	\$148	\$598	2.0	2,921
ECM 19	Install Low-Flow DHW Devices	1,485	0.0	12.2	\$298	\$746	\$148	\$598	2.0	2,921
Food Service & Refrigeration Measures		20,633	2.1	0.0	\$2,557	\$5,375	\$660	\$4,715	1.8	20,777
ECM 20	Refrigerator/Freezer Case Electrically Commutated Motors	5,704	0.5	0.0	\$661	\$1,213	\$160	\$1,053	1.6	5,744
ECM 21	Refrigeration Controls	906	0.0	0.0	\$116	\$252	\$50	\$202	1.7	913
ECM 22	Vending Machine Control	14,023	1.6	0.0	\$1,780	\$3,910	\$450	\$3,460	1.9	14,121
Custom Measures		109,523	0.0	-425.9	\$9,130	\$6,396	\$0	\$6,396	0.7	60,420
ECM 23	Optimize HVAC Schedule	102,137	0.0	-425.9	\$8,056	\$500	\$0	\$500	0.1	52,982
ECM 24	Replace Electric Water Heater with Heat Pump Water Heater	7,386	0.0	0.0	\$1,074	\$5,896	\$0	\$5,896	5.5	7,438
TOTALS		1,812,279	436.2	-103.4	\$220,438	\$1,925,185	\$213,805	\$1,711,381	7.8	1,812,846

* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

COST EFFECTIVE OPPORTUNITIES

Savings Potential



COST EFFECTIVE OPPORTUNITIES

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		899,901	187.9	-159.0	\$109,385	\$351,462	\$79,713	\$271,749	2.5	887,581
ECM 1	Install LED Fixtures	70,664	1.4	-0.2	\$8,696	\$40,792	\$5,520	\$35,272	4.1	71,139
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	3,577	1.1	-0.5	\$703	\$2,409	\$367	\$2,042	2.9	3,548
ECM 3	Retrofit Fixtures with LED Lamps	825,660	185.4	-158.3	\$99,986	\$308,261	\$73,826	\$234,435	2.3	812,894
Lighting Control Measures		194,407	41.6	-36.9	\$23,751	\$208,700	\$55,630	\$153,070	6.4	191,440
ECM 4	Install Occupancy Sensor Lighting Controls	137,649	33.6	-25.8	\$16,796	\$159,675	\$21,110	\$138,565	8.3	135,594
ECM 5	Install Daylight Dimming/Photocell Controls	230	0.0	0.0	\$30	\$200	\$0	\$200	6.8	232
ECM 6	Install High/Low Lighting Controls	56,528	8.0	-11.2	\$6,926	\$48,825	\$34,520	\$14,305	2.1	55,615
Motor Upgrades		2,814	0.6	0.0	\$360	\$7,979	\$0	\$7,979	22.2	2,834
ECM 7	Premium Efficiency Motors	2,814	0.6	0.0	\$360	\$7,979	\$0	\$7,979	22.2	2,834
Variable Frequency Drive (VFD) Measures		263,951	83.2	0.0	\$31,466	\$226,345	\$30,700	\$195,645	6.2	265,796
ECM 8	Install VFD on Variable Air Volume (VAV) Fans	23,457	6.1	0.0	\$3,000	\$17,540	\$1,400	\$16,140	5.4	23,621
ECM 9	Install VFDs on Constant Volume (CV) Fans	240,494	77.1	0.0	\$28,466	\$208,805	\$29,300	\$179,505	6.3	242,175
Unitary HVAC Measures		60,962	21.5	12.0	\$7,728	\$74,040	\$3,743	\$70,298	9.1	62,794
ECM 11	Install High Efficiency Air Conditioning Units	60,962	21.5	12.0	\$7,728	\$74,040	\$3,743	\$70,298	9.1	62,794
Gas Heating (HVAC/Process) Replacement		8,586	3.0	239.6	\$3,013	\$14,968	\$600	\$14,368	4.8	36,698
ECM 15	Install High Efficiency Unit Heaters	8,586	3.0	0.0	\$994	\$2,028	\$0	\$2,028	2.0	8,646
ECM 16	Install Infrared Heaters	0	0.0	239.6	\$2,018	\$12,940	\$600	\$12,340	6.1	28,051
HVAC System Improvements		2,495	0.0	19.3	\$498	\$2,034	\$104	\$1,930	3.9	4,775
ECM 17	Implement Demand Control Ventilation (DCV)	767	0.0	6.8	\$156	\$1,359	\$0	\$1,359	8.7	1,571
ECM 18	Install Pipe Insulation	1,728	0.0	12.5	\$343	\$674	\$104	\$570	1.7	3,204
Domestic Water Heating Upgrade		1,485	0.0	12.2	\$298	\$746	\$148	\$598	2.0	2,921
ECM 19	Install Low-Flow DHW Devices	1,485	0.0	12.2	\$298	\$746	\$148	\$598	2.0	2,921
Food Service & Refrigeration Measures		20,633	2.1	0.0	\$2,557	\$5,375	\$660	\$4,715	1.8	20,777
ECM 20	Refrigerator/Freezer Case Electrically Commutated Motors	5,704	0.5	0.0	\$661	\$1,213	\$160	\$1,053	1.6	5,744
ECM 21	Refrigeration Controls	906	0.0	0.0	\$116	\$252	\$50	\$202	1.7	913
ECM 22	Vending Machine Control	14,023	1.6	0.0	\$1,780	\$3,910	\$450	\$3,460	1.9	14,121
Custom Measures		109,523	0.0	-425.9	\$9,130	\$6,396	\$0	\$6,396	0.7	60,420
ECM 23	Optimize HVAC Schedule	102,137	0.0	-425.9	\$8,056	\$500	\$0	\$500	0.1	52,982
ECM 24	Replace Electric Water Heater with Heat Pump Water Heater	7,386	0.0	0.0	\$1,074	\$5,896	\$0	\$5,896	5.5	7,438
TOTALS		1,564,756	340.0	-338.7	\$188,186	\$898,045	\$171,298	\$726,747	3.9	1,536,036

* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

ACADEMIC/FOUNDERS HALL, GYM, & THEATER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			350,959	61.9	-68	\$40,109	\$114,115	\$26,719	\$87,396	2.2	345,469
ECM 1	Install LED Fixtures	Yes	22,645	0.0	0	\$2,623	\$11,474	\$1,800	\$9,674	3.7	22,803
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	968	0.3	0	\$110	\$661	\$95	\$566	5.1	951
ECM 3	Retrofit Fixtures with LED Lamps	Yes	327,347	61.6	-68	\$37,376	\$101,980	\$24,824	\$77,156	2.1	321,716
Lighting Control Measures			86,714	15.7	-18	\$9,899	\$88,796	\$28,180	\$60,616	6.1	85,197
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	56,278	11.7	-12	\$6,425	\$62,021	\$8,475	\$53,546	8.3	55,294
ECM 5	Install High/Low Lighting Controls	Yes	30,435	4.0	-6	\$3,474	\$26,775	\$19,705	\$7,070	2.0	29,903
Motor Upgrades			0	0.0	0	\$0	\$5,246	\$0	\$5,246	0.0	0
ECM 6	Premium Efficiency Motors	Yes	0	0.0	0	\$0	\$5,246	\$0	\$5,246	0.0	0
Variable Frequency Drive (VFD) Measures			207,165	49.3	0	\$23,994	\$346,345	\$15,800	\$330,545	13.8	208,614
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	130,884	43.1	0	\$15,159	\$91,584	\$12,800	\$78,784	5.2	131,799
ECM 8	Install VFDs on Heating Water Pumps	No	76,282	6.2	0	\$8,835	\$254,761	\$3,000	\$251,761	28.5	76,815
Unitary HVAC Measures			9,857	4.5	14	\$1,254	\$45,891	\$2,040	\$43,852	35.0	11,588
ECM 9	Install High Efficiency Air Conditioning Units	No	9,857	4.5	14	\$1,254	\$45,891	\$2,040	\$43,852	35.0	11,588
Gas Heating (HVAC/Process) Replacement			8,586	3.0	0	\$994	\$2,028	\$0	\$2,028	2.0	8,646
ECM 10	Install High Efficiency Unit Heaters	Yes	8,586	3.0	0	\$994	\$2,028	\$0	\$2,028	2.0	8,646
HVAC System Improvements			0	0.0	13	\$99	\$257	\$34	\$223	2.2	1,464
ECM 11	Install Pipe Insulation	Yes	0	0.0	13	\$99	\$257	\$34	\$223	2.2	1,464
Domestic Water Heating Upgrade			0	0.0	3	\$28	\$115	\$37	\$78	2.8	405
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	3	\$28	\$115	\$37	\$78	2.8	405
Food Service & Refrigeration Measures			10,358	1.1	0	\$1,200	\$2,593	\$310	\$2,283	1.9	10,430
ECM 13	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	5,704	0.5	0	\$661	\$1,213	\$160	\$1,053	1.6	5,744
ECM 14	Vending Machine Control	Yes	4,654	0.5	0	\$539	\$1,380	\$150	\$1,230	2.3	4,687
TOTALS (COST EFFECTIVE MEASURES)			587,500	124.8	-70	\$67,488	\$304,733	\$68,080	\$236,653	3.5	583,410
TOTALS (ALL MEASURES)			673,639	135.5	-56	\$77,577	\$605,386	\$73,119	\$532,266	6.9	671,813

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

HAMILTON HALL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			8,331	2.4	-2	\$1,050	\$4,066	\$1,046	\$3,020	2.9	8,195
ECM 1	Install LED Fixtures	Yes	372	0.0	0	\$48	\$382	\$50	\$332	6.9	375
ECM 2	Retrofit Fixtures with LED Lamps	Yes	7,959	2.4	-2	\$1,003	\$3,683	\$996	\$2,687	2.7	7,820
Lighting Control Measures			3,359	0.7	-1	\$424	\$3,987	\$1,365	\$2,622	6.2	3,306
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,276	0.4	0	\$161	\$2,662	\$320	\$2,342	14.6	1,254
ECM 4	Install Photocell Controls	Yes	230	0.0	0	\$30	\$200	\$0	\$200	6.8	232
ECM 5	Install High/Low Lighting Controls	Yes	1,853	0.3	0	\$233	\$1,125	\$1,045	\$80	0.3	1,821
Variable Frequency Drive (VFD) Measures			4,707	1.5	0	\$605	\$5,028	\$900	\$4,128	6.8	4,740
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	4,707	1.5	0	\$605	\$5,028	\$900	\$4,128	6.8	4,740
Gas Heating (HVAC/Process) Replacement			0	0.0	35	\$441	\$38,867	\$1,859	\$37,008	84.0	4,114
ECM 7	Install High Efficiency Hot Water Boilers	No	0	0.0	35	\$441	\$38,867	\$1,859	\$37,008	84.0	4,114
Food Service & Refrigeration Measures			1,551	0.2	0	\$199	\$460	\$50	\$410	2.1	1,562
ECM 8	Vending Machine Control	Yes	1,551	0.2	0	\$199	\$460	\$50	\$410	2.1	1,562
TOTALS (COST EFFECTIVE MEASURES)			17,948	4.7	-2	\$2,279	\$13,540	\$3,361	\$10,179	4.5	17,802
TOTALS (ALL MEASURES)			17,948	4.7	33	\$2,720	\$52,407	\$5,220	\$47,187	17.4	21,916

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

WANAQUE ACADEMIC CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			66,461	21.2	-14	\$7,413	\$34,257	\$7,840	\$26,417	3.6	65,342
ECM 1	Retrofit Fixtures with LED Lamps	Yes	66,461	21.2	-14	\$7,413	\$34,257	\$7,840	\$26,417	3.6	65,342
Lighting Control Measures			25,183	7.2	-5	\$2,808	\$27,987	\$6,785	\$21,202	7.6	24,743
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	20,600	6.3	-4	\$2,297	\$23,262	\$2,900	\$20,362	8.9	20,240
ECM 3	Install High/Low Lighting Controls	Yes	4,583	1.0	-1	\$511	\$4,725	\$3,885	\$840	1.6	4,502
Variable Frequency Drive (VFD) Measures			60,091	17.1	0	\$6,799	\$52,863	\$9,300	\$43,563	6.4	60,511
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	60,091	17.1	0	\$6,799	\$52,863	\$9,300	\$43,563	6.4	60,511
Unitary HVAC Measures			65,679	37.3	25	\$7,631	\$248,831	\$12,510	\$236,321	31.0	69,079
ECM 5	Install High Efficiency Air Conditioning Units	No	64,215	35.7	25	\$7,466	\$242,649	\$12,510	\$230,139	30.8	67,605
ECM 6	Install High Efficiency Heat Pumps	No	1,464	1.6	0	\$166	\$6,182	\$0	\$6,182	37.3	1,474
Gas Heating (HVAC/Process) Replacement			0	0.0	84	\$670	\$19,312	\$1,500	\$17,812	26.6	9,868
ECM 7	Install High Efficiency Furnaces	No	0	0.0	84	\$670	\$19,312	\$1,500	\$17,812	26.6	9,868
Domestic Water Heating Upgrade			0	0.0	5	\$40	\$409	\$10	\$399	10.0	589
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	5	\$40	\$409	\$10	\$399	10.0	589
Food Service & Refrigeration Measures			1,551	0.2	0	\$176	\$460	\$50	\$410	2.3	1,562
ECM 9	Vending Machine Control	Yes	1,551	0.2	0	\$176	\$460	\$50	\$410	2.3	1,562
TOTALS (COST EFFECTIVE MEASURES)			153,286	45.8	-14	\$17,236	\$115,976	\$23,985	\$91,991	5.3	152,747
TOTALS (ALL MEASURES)			218,965	83.0	96	\$25,537	\$384,119	\$37,995	\$346,125	13.6	231,694

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

HAMILTON CLUB

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			16,964	6.3	-4	\$2,366	\$11,239	\$1,616	\$9,623	4.1	16,667
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,173	0.8	0	\$164	\$1,164	\$182	\$982	6.0	1,153
ECM 2	Retrofit Fixtures with LED Lamps	Yes	15,791	5.6	-3	\$2,202	\$10,075	\$1,434	\$8,641	3.9	15,515
Lighting Control Measures			3,440	1.3	-1	\$480	\$6,816	\$2,255	\$4,561	9.5	3,379
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,441	0.8	0	\$201	\$3,666	\$505	\$3,161	15.7	1,416
ECM 4	Install High/Low Lighting Controls	Yes	1,998	0.5	0	\$279	\$3,150	\$1,750	\$1,400	5.0	1,963
Variable Frequency Drive (VFD) Measures			6,108	3.2	0	\$863	\$14,137	\$1,300	\$12,837	14.9	6,151
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	6,108	3.2	0	\$863	\$14,137	\$1,300	\$12,837	14.9	6,151
Unitary HVAC Measures			18,410	12.3	6	\$2,655	\$89,320	\$4,349	\$84,971	32.0	19,299
ECM 6	Install High Efficiency Air Conditioning Units	No	18,410	12.3	6	\$2,655	\$89,320	\$4,349	\$84,971	32.0	19,299
Gas Heating (HVAC/Process) Replacement			0	0.0	29	\$243	\$9,065	\$1,000	\$8,065	33.2	3,365
ECM 7	Install High Efficiency Furnaces	No	0	0.0	29	\$243	\$9,065	\$1,000	\$8,065	33.2	3,365
Domestic Water Heating Upgrade			572	0.0	0	\$81	\$57	\$29	\$29	0.4	576
ECM 8	Install Low-Flow DHW Devices	Yes	572	0.0	0	\$81	\$57	\$29	\$29	0.4	576
TOTALS (COST EFFECTIVE MEASURES)			27,084	10.9	-4	\$3,790	\$32,250	\$5,200	\$27,050	7.1	26,774
TOTALS (ALL MEASURES)			45,494	23.1	31	\$6,688	\$130,635	\$10,549	\$120,086	18.0	49,439

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

PUBLIC SAFETY ACADEMY

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			54,245	8.5	-9	\$6,858	\$27,000	\$4,794	\$22,206	3.2	53,512
ECM 1	Install LED Fixtures	Yes	8,975	0.1	0	\$1,147	\$12,834	\$1,680	\$11,154	9.7	9,019
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	No	33	0.0	0	\$4	\$69	\$10	\$59	14.1	33
ECM 3	Retrofit Fixtures with LED Lamps	Yes	45,236	8.3	-9	\$5,707	\$14,098	\$3,104	\$10,994	1.9	44,461
Lighting Control Measures			17,488	2.9	-3	\$2,208	\$11,612	\$1,500	\$10,112	4.6	17,206
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	17,488	2.9	-3	\$2,208	\$11,612	\$1,500	\$10,112	4.6	17,206
Motor Upgrades			2,814	0.6	0	\$360	\$2,733	\$0	\$2,733	7.6	2,834
ECM 5	Premium Efficiency Motors	Yes	2,814	0.6	0	\$360	\$2,733	\$0	\$2,733	7.6	2,834
Variable Frequency Drive (VFD) Measures			23,457	6.1	0	\$3,000	\$17,540	\$1,400	\$16,140	5.4	23,621
ECM 6	Install VFD on Variable Air Volume (VAV) Fans	Yes	23,457	6.1	0	\$3,000	\$17,540	\$1,400	\$16,140	5.4	23,621
Unitary HVAC Measures			67,200	25.2	10	\$8,679	\$218,049	\$11,475	\$206,574	23.8	68,845
ECM 7	Install High Efficiency Air Conditioning Units	No	67,200	25.2	10	\$8,679	\$218,049	\$11,475	\$206,574	23.8	68,845
Gas Heating (HVAC/Process) Replacement			0	0.0	240	\$2,018	\$12,940	\$600	\$12,340	6.1	28,051
ECM 8	Install Infrared Heaters	Yes	0	0.0	240	\$2,018	\$12,940	\$600	\$12,340	6.1	28,051
HVAC System Improvements			767	0.0	7	\$156	\$1,359	\$0	\$1,359	8.7	1,571
ECM 9	Implement Demand Control Ventilation (DCV)	Yes	767	0.0	7	\$156	\$1,359	\$0	\$1,359	8.7	1,571
Domestic Water Heating Upgrade			164	0.0	4	\$52	\$93	\$40	\$53	1.0	596
ECM 10	Install Low-Flow DHW Devices	Yes	164	0.0	4	\$52	\$93	\$40	\$53	1.0	596
Food Service & Refrigeration Measures			2,800	0.2	0	\$358	\$942	\$100	\$842	2.4	2,820
ECM 11	Refrigeration Controls	Yes	906	0.0	0	\$116	\$252	\$50	\$202	1.7	913
ECM 12	Vending Machine Control	Yes	1,894	0.2	0	\$242	\$690	\$50	\$640	2.6	1,907
TOTALS (COST EFFECTIVE MEASURES)			101,701	18.3	237	\$15,005	\$74,152	\$8,424	\$65,728	4.4	130,179
TOTALS (ALL MEASURES)			168,934	43.5	247	\$23,688	\$292,270	\$19,909	\$272,361	11.5	199,057

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

COMMUNITY TECHNOLOGY CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			22,282	4.2	-4	\$2,889	\$7,278	\$1,556	\$5,722	2.0	21,921
ECM 1	Retrofit Fixtures with LED Lamps	Yes	22,282	4.2	-4	\$2,889	\$7,278	\$1,556	\$5,722	2.0	21,921
Lighting Control Measures			12,416	1.5	-2	\$1,609	\$9,492	\$3,085	\$6,407	4.0	12,211
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	4,040	0.7	-1	\$523	\$5,442	\$725	\$4,717	9.0	3,969
ECM 3	Install High/Low Lighting Controls	Yes	8,376	0.7	-2	\$1,086	\$4,050	\$2,360	\$1,690	1.6	8,242
Variable Frequency Drive (VFD) Measures			11,002	3.1	0	\$1,445	\$14,137	\$800	\$13,337	9.2	11,079
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	11,002	3.1	0	\$1,445	\$14,137	\$800	\$13,337	9.2	11,079
Unitary HVAC Measures			27,857	7.7	12	\$3,763	\$54,153	\$2,693	\$51,461	13.7	29,457
ECM 5	Install High Efficiency Air Conditioning Units	Yes	27,857	7.7	12	\$3,763	\$54,153	\$2,693	\$51,461	13.7	29,457
HVAC System Improvements			533	0.0	0	\$70	\$239	\$40	\$199	2.8	537
ECM 6	Install Pipe Insulation	Yes	533	0.0	0	\$70	\$239	\$40	\$199	2.8	537
Domestic Water Heating Upgrade			667	0.0	0	\$88	\$57	\$29	\$29	0.3	672
ECM 7	Install Low-Flow DHW Devices	Yes	667	0.0	0	\$88	\$57	\$29	\$29	0.3	672
TOTALS (COST EFFECTIVE MEASURES)			74,759	16.6	5	\$9,864	\$85,357	\$8,202	\$77,154	7.8	75,877
TOTALS (ALL MEASURES)			74,759	16.6	5	\$9,864	\$85,357	\$8,202	\$77,154	7.8	75,877

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

BROADWAY ACADEMIC CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			11,977	8.5	-3	\$1,801	\$15,933	\$3,432	\$12,501	6.9	11,768
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	No	1,164	2.2	0	\$175	\$4,356	\$710	\$3,646	20.8	1,143
ECM 2	Retrofit Fixtures with LED Lamps	Yes	10,814	6.3	-2	\$1,626	\$11,577	\$2,722	\$8,855	5.4	10,624
Lighting Control Measures			3,293	2.1	-1	\$495	\$8,398	\$1,420	\$6,978	14.1	3,235
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	3,164	2.0	-1	\$476	\$7,948	\$1,070	\$6,878	14.5	3,109
ECM 4	Install High/Low Lighting Controls	Yes	129	0.1	0	\$19	\$450	\$350	\$100	5.2	126
Motor Upgrades			168	0.1	0	\$26	\$938	\$0	\$938	36.6	169
ECM 5	Premium Efficiency Motors	No	168	0.1	0	\$26	\$938	\$0	\$938	36.6	169
Variable Frequency Drive (VFD) Measures			3,751	1.7	0	\$573	\$9,110	\$400	\$8,710	15.2	3,777
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	3,751	1.7	0	\$573	\$9,110	\$400	\$8,710	15.2	3,777
Unitary HVAC Measures			1,705	1.7	5	\$315	\$23,748	\$1,030	\$22,718	72.0	2,297
ECM 7	Install High Efficiency Air Conditioning Units	No	1,705	1.7	5	\$315	\$23,748	\$1,030	\$22,718	72.0	2,297
HVAC System Improvements			579	0.0	0	\$88	\$84	\$14	\$70	0.8	584
ECM 8	Install Pipe Insulation	Yes	579	0.0	0	\$88	\$84	\$14	\$70	0.8	584
Custom Measures			3,693	0.0	0	\$564	\$3,513	\$0	\$3,513	6.2	3,719
ECM 9	Replace Electric Water Heater with Heat Pump Water Heater	Yes	3,693	0.0	0	\$564	\$3,513	\$0	\$3,513	6.2	3,719
TOTALS (COST EFFECTIVE MEASURES)			22,130	10.1	-3	\$3,346	\$32,681	\$4,556	\$28,125	8.4	21,939
TOTALS (ALL MEASURES)			25,165	14.0	2	\$3,862	\$61,723	\$6,296	\$55,427	14.4	25,548

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Pay back Period is based on net measure costs (i.e. after incentives).

PRUDEN BUILDING

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			12,468	5.3	-3	\$2,069	\$9,837	\$2,660	\$7,177	3.5	12,250
ECM 1	Retrofit Fixtures with LED Lamps	Yes	12,468	5.3	-3	\$2,069	\$9,837	\$2,660	\$7,177	3.5	12,250
Lighting Control Measures			3,482	0.9	-1	\$578	\$2,861	\$790	\$2,071	3.6	3,421
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	710	0.7	0	\$118	\$1,736	\$230	\$1,506	12.8	697
ECM 3	Install High/Low Lighting Controls	Yes	2,772	0.2	-1	\$460	\$1,125	\$560	\$565	1.2	2,724
Unitary HVAC Measures			3,705	4.6	10	\$721	\$37,331	\$1,840	\$35,491	49.2	4,930
ECM 4	Install High Efficiency Air Conditioning Units	No	3,705	4.6	10	\$721	\$37,331	\$1,840	\$35,491	49.2	4,930
Food Service & Refrigeration Measures			1,954	0.2	0	\$328	\$460	\$50	\$410	1.2	1,968
ECM 5	Vending Machine Control	Yes	1,954	0.2	0	\$328	\$460	\$50	\$410	1.2	1,968
TOTALS (COST EFFECTIVE MEASURES)			17,904	6.4	-3	\$2,976	\$13,158	\$3,500	\$9,658	3.2	17,639
TOTALS (ALL MEASURES)			21,609	11.0	7	\$3,697	\$50,489	\$5,340	\$45,149	12.2	22,569

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

PASSAIC ACADEMIC CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			93,343	14.5	0	\$11,662	\$39,413	\$7,285	\$32,128	2.8	93,996
ECM 1	Install LED Fixtures	Yes	36,219	1.2	0	\$4,525	\$14,620	\$1,790	\$12,830	2.8	36,472
ECM 2	Retrofit Fixtures with LED Lamps	Yes	57,124	13.3	0	\$7,137	\$24,793	\$5,495	\$19,298	2.7	57,523
Lighting Control Measures			16,049	3.8	0	\$2,005	\$21,731	\$4,120	\$17,611	8.8	16,161
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	13,434	3.5	0	\$1,678	\$19,256	\$2,650	\$16,606	9.9	13,528
ECM 4	Install High/Low Lighting Controls	Yes	2,615	0.3	0	\$327	\$2,475	\$1,470	\$1,005	3.1	2,633
Unitary HVAC Measures			509	0.5	0	\$64	\$2,638	\$0	\$2,638	41.5	513
ECM 5	Install High Efficiency Heat Pumps	No	509	0.5	0	\$64	\$2,638	\$0	\$2,638	41.5	513
Domestic Water Heating Upgrade			57	0.0	0	\$7	\$7	\$2	\$5	0.7	58
ECM 6	Install Low-Flow DHW Devices	Yes	57	0.0	0	\$7	\$7	\$2	\$5	0.7	58
Food Service & Refrigeration Measures			1,209	0.1	0	\$151	\$230	\$50	\$180	1.2	1,217
ECM 7	Vending Machine Control	Yes	1,209	0.1	0	\$151	\$230	\$50	\$180	1.2	1,217
TOTALS (COST EFFECTIVE MEASURES)			110,658	18.4	0	\$13,826	\$61,382	\$11,457	\$49,925	3.6	111,432
TOTALS (ALL MEASURES)			111,167	19.0	0	\$13,889	\$64,019	\$11,457	\$52,562	3.8	111,944

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

MEMORIAL HALL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			187,996	39.6	-39	\$22,132	\$61,303	\$15,645	\$45,658	2.1	184,708
ECM 1	Retrofit Fixtures with LED Lamps	Yes	187,996	39.6	-39	\$22,132	\$61,303	\$15,645	\$45,658	2.1	184,708
Lighting Control Measures			4,002	0.6	-1	\$471	\$3,917	\$875	\$3,042	6.5	3,932
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	2,997	0.5	-1	\$353	\$3,242	\$455	\$2,787	7.9	2,944
ECM 3	Install High/Low Lighting Controls	Yes	1,005	0.1	0	\$118	\$675	\$420	\$255	2.2	988
Variable Frequency Drive (VFD) Measures			15,637	4.3	0	\$1,873	\$11,890	\$2,000	\$9,890	5.3	15,746
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	15,637	4.3	0	\$1,873	\$11,890	\$2,000	\$9,890	5.3	15,746
Unitary HVAC Measures			33,105	13.8	0	\$3,965	\$19,887	\$1,050	\$18,837	4.8	33,337
ECM 5	Install High Efficiency Air Conditioning Units	Yes	33,105	13.8	0	\$3,965	\$19,887	\$1,050	\$18,837	4.8	33,337
Domestic Water Heating Upgrade			25	0.0	0	\$3	\$7	\$2	\$5	1.8	25
ECM 6	Install Low-Flow DHW Devices	Yes	25	0.0	0	\$3	\$7	\$2	\$5	1.8	25
Food Service & Refrigeration Measures			1,209	0.1	0	\$145	\$230	\$50	\$180	1.2	1,217
ECM 7	Vending Machine Control	Yes	1,209	0.1	0	\$145	\$230	\$50	\$180	1.2	1,217
Custom Measures			102,137	0.0	-426	\$8,056	\$500	\$0	\$500	0.1	52,982
ECM 8	Optimize HVAC Schedule	Yes	102,137	0.0	-426	\$8,056	\$500	\$0	\$500	0.1	52,982
TOTALS (COST EFFECTIVE MEASURES)			344,111	58.4	-466	\$36,645	\$97,735	\$19,622	\$78,113	2.1	291,947
TOTALS (ALL MEASURES)			344,111	58.4	-466	\$36,645	\$97,735	\$19,622	\$78,113	2.1	291,947

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

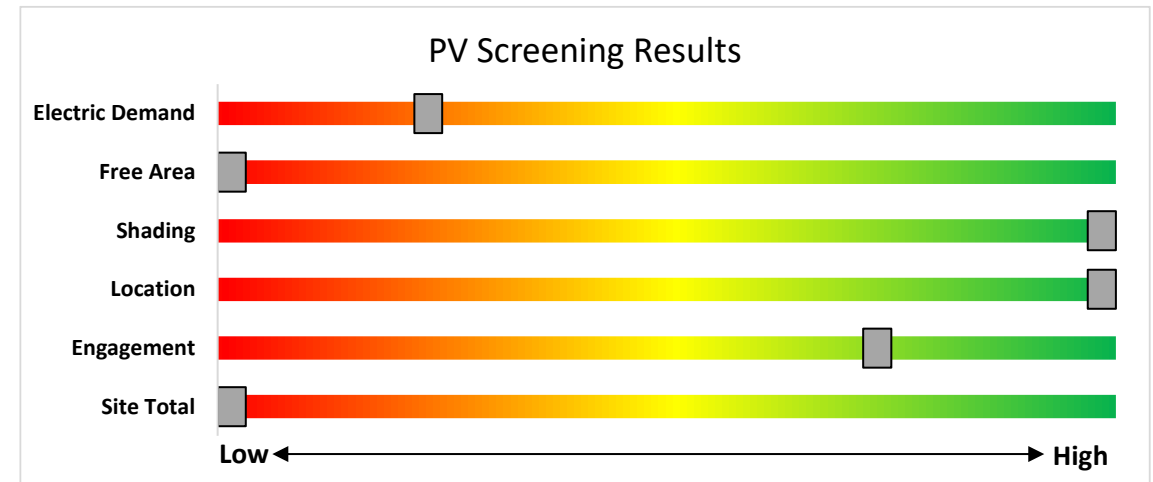
ENROLLMENT AND STUDENT SERVICES CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			63,790	15.8	-13	\$9,086	\$26,727	\$6,953	\$19,774	2.2	62,736
ECM 1	Install LED Fixtures	Yes	2,453	0.0	0	\$354	\$1,482	\$200	\$1,282	3.6	2,470
ECM 2	Retrofit Fixtures with LED Lamps	Yes	61,337	15.8	-13	\$8,732	\$25,245	\$6,753	\$18,492	2.1	60,266
Lighting Control Measures			16,205	4.0	-3	\$2,307	\$19,193	\$4,315	\$14,878	6.4	15,921
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	14,015	3.5	-3	\$1,995	\$15,818	\$1,865	\$13,953	7.0	13,770
ECM 4	Install High/Low Lighting Controls	Yes	2,190	0.5	0	\$312	\$3,375	\$2,450	\$925	3.0	2,152
TOTALS (COST EFFECTIVE MEASURES)			79,995	19.8	-16	\$11,393	\$45,920	\$11,268	\$34,652	3.0	78,657
TOTALS (ALL MEASURES)			79,995	19.8	-16	\$11,393	\$45,920	\$11,268	\$34,652	3.0	78,657

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

INSTITUTE FOR AMERICA'S NEW AND EMERGING WORKFORCE FIREHOUSE



It should be noted that while this facility does not meet the minimum criteria for this LGEA, other factors, such as a larger campus array plan, may make a solar project at this location feasible. We suggest working with a solar contractor to determine how this can fit into a campus plan.

ZENDELL HALL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			2,776	0.1	0	\$830	\$727	\$108	\$619	0.7	2,794
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,436	0.1	0	\$429	\$584	\$90	\$494	1.2	1,445
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,340	0.0	0	\$401	\$143	\$18	\$125	0.3	1,350
Lighting Control Measures			561	0.3	0	\$166	\$1,608	\$515	\$1,093	6.6	551
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	383	0.2	0	\$113	\$1,158	\$165	\$993	8.8	376
ECM 4	Install High/Low Lighting Controls	Yes	178	0.1	0	\$53	\$450	\$350	\$100	1.9	175
TOTALS (COST EFFECTIVE MEASURES)			3,337	0.4	0	\$996	\$2,335	\$623	\$1,712	1.7	3,345
TOTALS (ALL MEASURES)			3,337	0.4	0	\$996	\$2,335	\$623	\$1,712	1.7	3,345

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

GAME ROOM & FITNESS CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			9,505	1.9	-1	\$1,299	\$3,991	\$779	\$3,212	2.5	9,399
ECM 1	Retrofit Fixtures with LED Lamps	Yes	9,505	1.9	-1	\$1,299	\$3,991	\$779	\$3,212	2.5	9,399
Lighting Control Measures			2,217	0.6	0	\$302	\$2,302	\$425	\$1,877	6.2	2,178
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	1,823	0.5	0	\$248	\$1,852	\$250	\$1,602	6.5	1,791
ECM 3	Install High/Low Lighting Controls	Yes	394	0.1	0	\$54	\$450	\$175	\$275	5.1	387
Variable Frequency Drive (VFD) Measures			8,314	3.0	0	\$1,148	\$10,055	\$1,800	\$8,255	7.2	8,372
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	8,314	3.0	0	\$1,148	\$10,055	\$1,800	\$8,255	7.2	8,372
Unitary HVAC Measures			2,250	1.6	5	\$360	\$31,245	\$1,185	\$30,060	83.5	2,895
ECM 5	Install High Efficiency Air Conditioning Units	No	2,250	1.6	5	\$360	\$31,245	\$1,185	\$30,060	83.5	2,895
HVAC System Improvements			1,178	0.0	11	\$264	\$2,814	\$16	\$2,798	10.6	2,476
ECM 6	Implement Demand Control Ventilation (DCV)	No	563	0.0	11	\$179	\$2,719	\$0	\$2,719	15.2	1,856
ECM 7	Install Pipe Insulation	Yes	615	0.0	0	\$85	\$95	\$16	\$79	0.9	620
Custom Measures			3,693	0.0	0	\$510	\$2,383	\$0	\$2,383	4.7	3,719
ECM 8	Replace Electric Water Heater with Heat Pump Water Heater	Yes	3,693	0.0	0	\$510	\$2,383	\$0	\$2,383	4.7	3,719
TOTALS (COST EFFECTIVE MEASURES)			24,344	5.4	-2	\$3,344	\$18,827	\$3,020	\$15,807	4.7	24,288
TOTALS (ALL MEASURES)			27,157	7.0	14	\$3,883	\$52,790	\$4,205	\$48,585	12.5	29,039

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

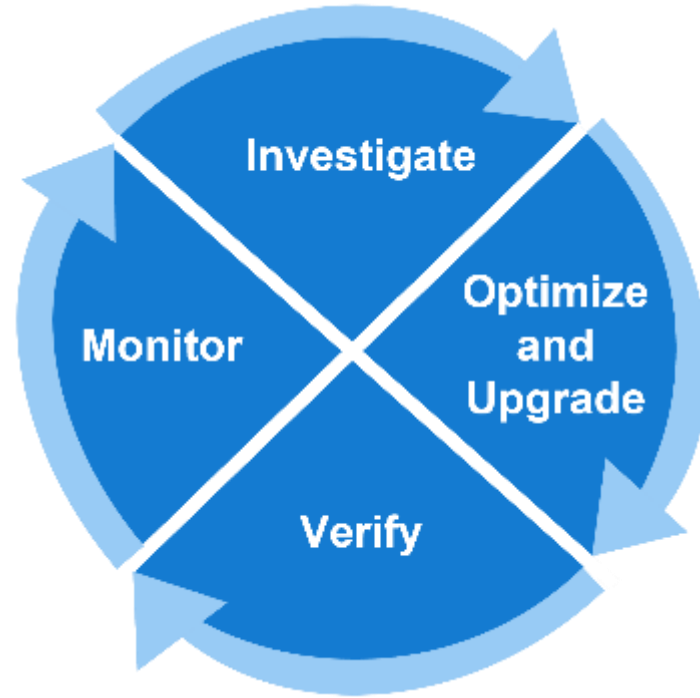
ENERGY EFFICIENT BEST PRACTICES

- Reduce Air Leakage
- Close Doors and Windows
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Use Fans to Reduce Cooling Load
- Use Window Treatments/Coverings
- Clean and/or Replace HVAC filters
- Check and Seal Duct Leakage
- Perform Proper Boiler Maintenance
- Perform Proper Water Heater Maintenance
- Plug Load Controls
- Water Conservation

See individual reports for specific EE practices by building

MEASURES FOR FUTURE CONSIDERATION

- Retro-Commissioning Study
- Upgrade/Replace Energy Management System
- Revolving Doors
- Electric Submeter
- Install High Efficiency Energy Recovery Units (ERUs)
- Replace Built-up Air Handler(s)



EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV

Know your EV Charging Stations



LEVEL 1



4-6 miles/hour
Replenish Rate



7-30 hours for full charge

Approximate time to charge a battery*

CHARGE
110/120V

LEVEL 2



10-20 miles/hour
Replenish Rate



2-10 hours for full charge

Approximate time to charge a battery*

CHARGE
208/240V

DIRECT CURRENT (DC) FAST CHARGING*



120-200 miles/hour
Replenish Rate



20-90 minutes for full charge

Approximate time to charge a battery*

CHARGE
480V or 208V

*dependent on the size of the battery

PCCC

Potential:

Medium



SOLAR ENERGY GENERATION POTENTIAL

NJCleanEnergy.com/renewable-energy

	Academic & Founders Hall	Wanaque	Public Safety Academy	Memorial Hall	Enrollment & Student
<i>Potential:</i>	HIGH	HIGH	HIGH	HIGH	HIGH
<i>System Potential: (kW)</i>	335	224	158	138	56
<i>Electric Generation: (kWh per year)</i>	399,109	278,780	188,237	164,409	66,717
<i>Displaced Cost: (per year)</i>	\$46,220	\$31,550	\$24,070	\$19,690	\$9,630

FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

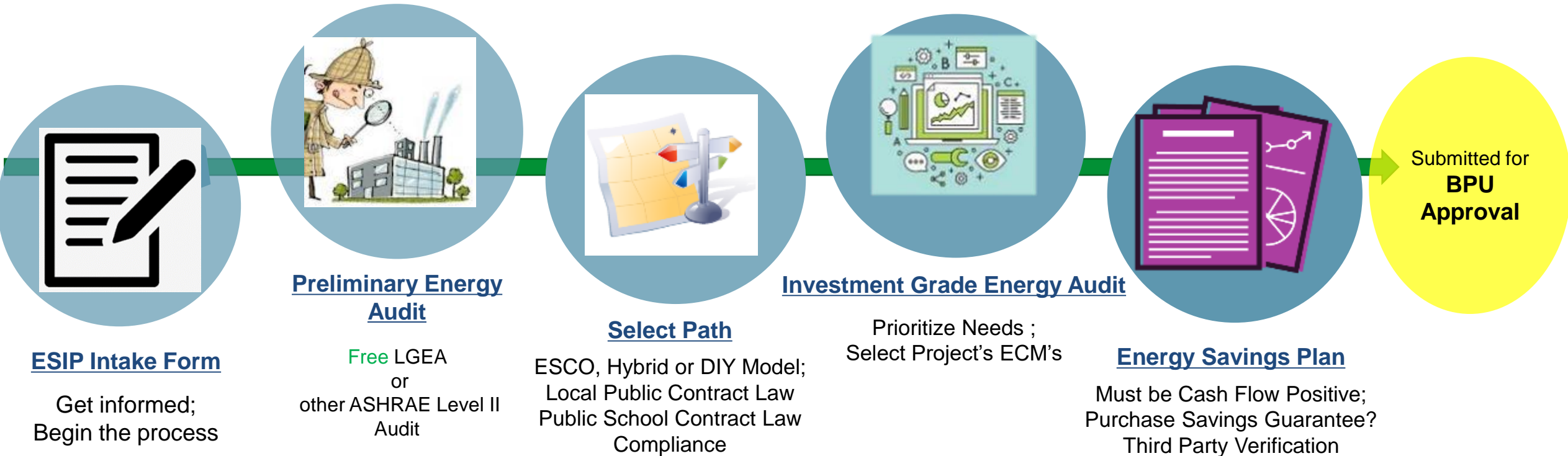
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting = NJ ESIP Program
- A creative tool and financing mechanism that allows public entities to make energy efficiency improvements without impacting their budgets
- Administered by the NJBPU
- Project is paid for with the value of its own energy savings
- 2 Options: Lease Purchase Loan or Bond
- 15 or 20 year pay back term
- NJBPU Approved Incentive Programs
 - Utility or NJCEP
- Can be combined with Federal/State Grants
- No upfront capital expenses
- No referendum or impact to tax payers



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP

FOR MORE INFORMATION

Michelle Rossi

ESIP Coordinator

ESIP@bpu.nj.gov

o: 609.913.6295

c: 609.915.0903

C&I ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com

LOCAL
GOVERNMENT
CUSTOMERS

COMMERCIAL &
INSTITUTIONAL
CUSTOMERS

LARGE
ENERGY
CUSTOMERS

EXISTING BUILDINGS

MEASUREMENT & AUDITS

FREE Energy Audits



RETROFITS

Prescriptive &
Custom Rebates

Direct Install

Engineered Solutions

And more from
your local utility!



Incentives up
to \$4 million
for eligible projects



NEW CONSTRUCTION

Prescriptive & Custom
Rebates for New
Construction and
Gut Rehabs

Pay for Performance
incentives for
buildings over
50,000 sq. ft.



DISTRIBUTED ENERGY RESOURCES

Combined Heat & Power
and Fuel Cell Installation
Incentives

Microgrid Development

Battery Storage

Muni EV Fleets



Key:

Programs run by investor-owned utility companies



Programs run by NJCEP



UTILITY RUN ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com/Transition

PRESCRIPTIVE & CUSTOM REBATES:

- Individual high efficiency equipment rebates for renovation, remodeling, and equipment replacement
- Flexibility to do a little or a lot
- No size requirement

DIRECT INSTALL:

- Turn-key retrofit program to replace outdated and inefficient equipment including, lighting, HVAC, refrigeration, etc.
- The facility must have an average electric peak demand <200kW in the previous year to qualify

ENGINEERED SOLUTIONS:

- Comprehensive, whole-building approach to saving energy
- The facility must have an average electric peak demand >200kW in the previous year to qualify



UTILITY RUN ENERGY EFFICIENCY PROGRAMS

PSE&G

David Kirsch - David.Kirsch@pseg.com

Steven Barba - Steven.T.Barba@pseg.com

FOR MORE INFORMATION

Sarah Walters – LGEA Project Manager

SWalters@trccompanies.com

(732) 589-7372

Moussa Traore – LGEA Technical Manager

MTraore@trccompanies.com

(732) 902-1797

Ryan Knippenberg – LGEA Energy Auditor

RKnippenberg@trccompanies.com

(732) 439-7184

THANK YOU

