

LGEA Presentation Township of Montclair

February 25, 2025



New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

- *Township of Montclair*
 - Lisa Johnson – Environmental and Code Coordinator
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Moussa Traore – LGEA Technical Manager
 - Michelle Rossi – ESIP Coordinator (BPU)

AGENDA

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

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:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Food Service and Refrigeration Equipment
- Process Equipment
- Building Automation System (BAS)

Utility Consumption:

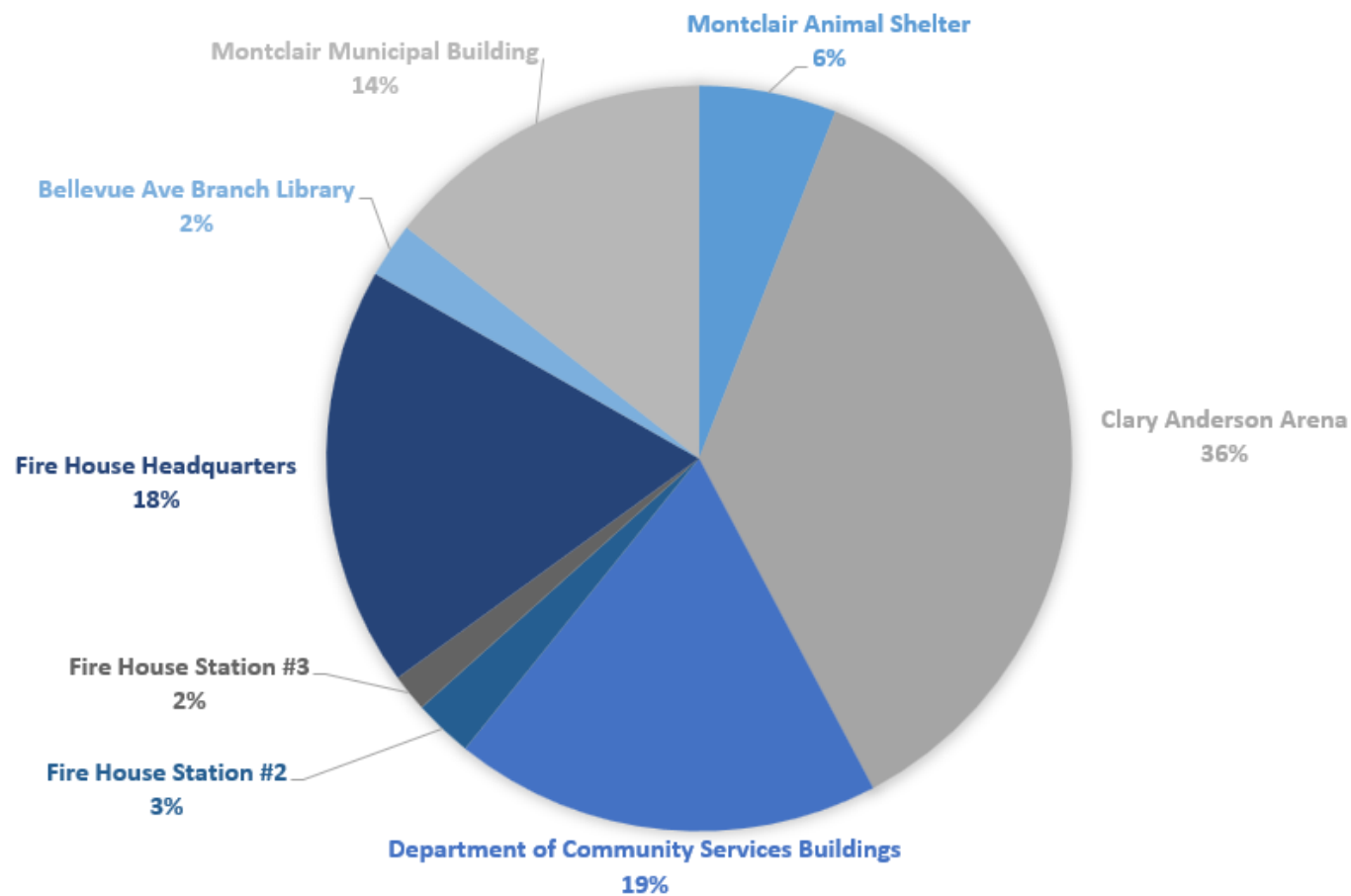
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

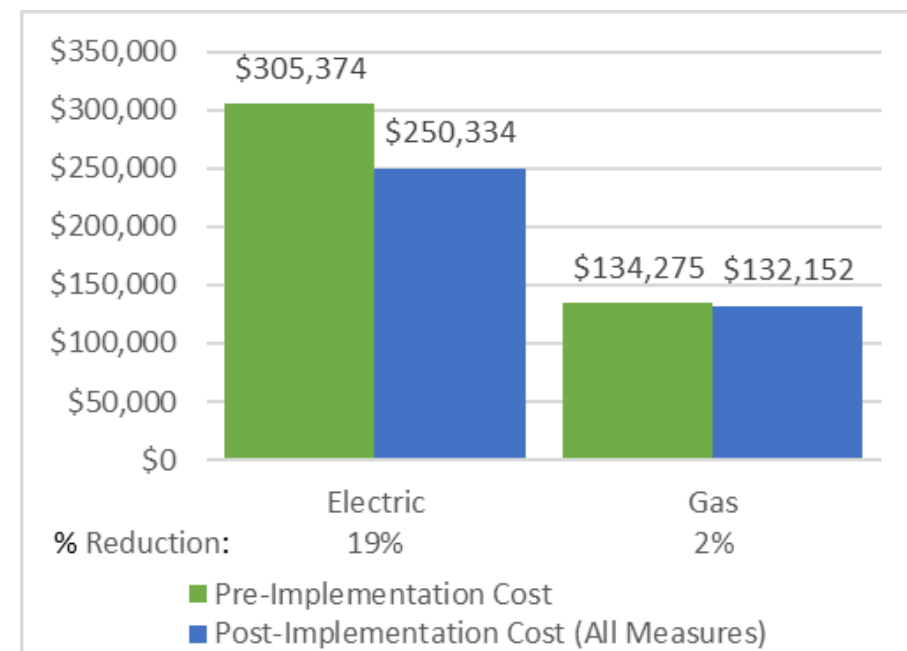
- Bellevue Avenue Branch Library
- Montclair Animal Shelter
- Fire House Headquarters
- Fire House Station #2
- Department of Community Services
- Fire House Station #3
- Clay Anderson Arena
- Montclair Municipal Building

UTILITY BREAKOUT

Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

**ENERGY STAR® Statement of Energy Performance**
LEARN MORE AT [energystar.gov](https://www.energystar.gov)

N/A
Fire House Station #2
Primary Property Type: Fire Station
Gross Floor Area (ft²): 7,084
Built: 1905
For Year Ending: October 31, 2023
Date Generated: August 19, 2024
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 Fire House Station #2 586-588 Valley Road Montclair, New Jersey 07042	Property Owner Montclair Township 205 Claremont Avenue Montclair, NJ 07042 (973) 509-5721	Primary Contact Lisa Johnson 205 Claremont Avenue Montclair, NJ 07042 (973) 509-5721 ljohnson@montclairnjusa.org
Property ID: 33375582		

Energy Consumption and Energy Use Intensity (EUI)		
Site EUI 60.8 kBtu/ft²	Annual Energy by Fuel Electric - Grid (kBtu) 172,400 (40%) Natural Gas (kBtu) 258,279 (60%)	National Median Comparison National Median Site EUI (kBtu/ft²) 71.3 National Median Source EUI (kBtu/ft²) 124.9 % Diff from National Median Source EUI -15%
Source EUI 106.4 kBtu/ft²	Annual Emissions Total (Location-Based) GHG Emissions (Metric Tons CO2e/year) 29	

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

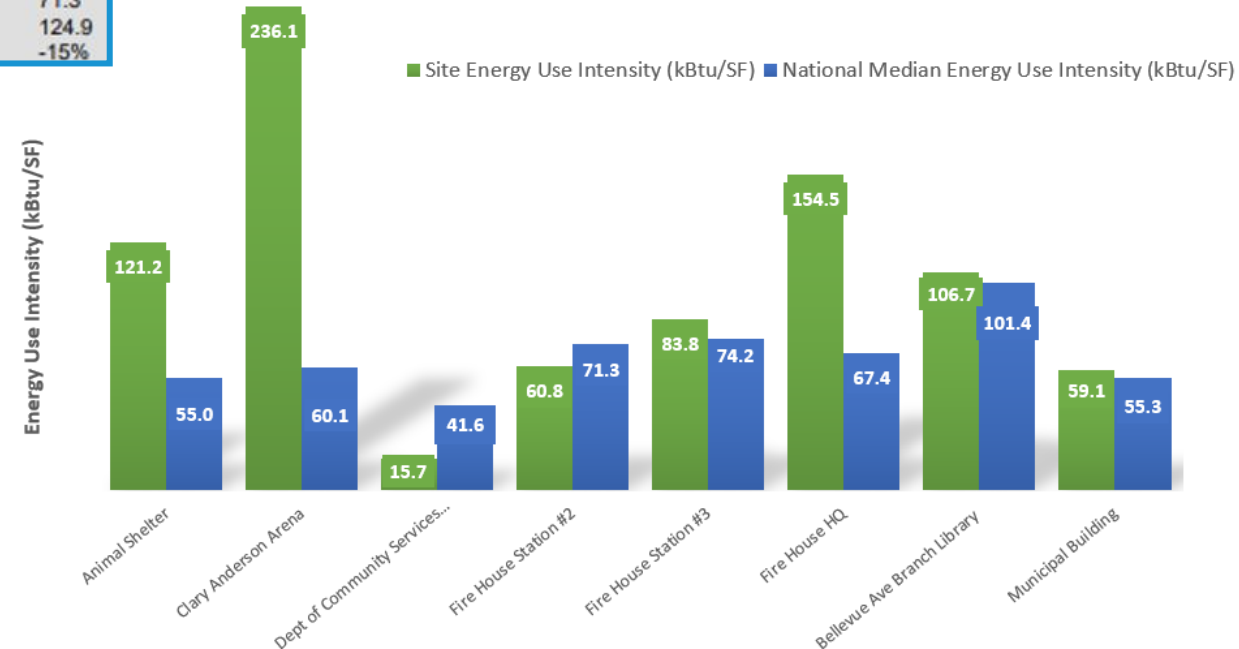
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Professional Engineer or Registered Architect Stamp (if applicable)

Site EUI
60.8 kBtu/ft²
Source EUI
106.4 kBtu/ft²

National Median Comparison
National Median Site EUI (kBtu/ft²) 71.3
National Median Source EUI (kBtu/ft²) 124.9
% Diff from National Median Source EUI -15%

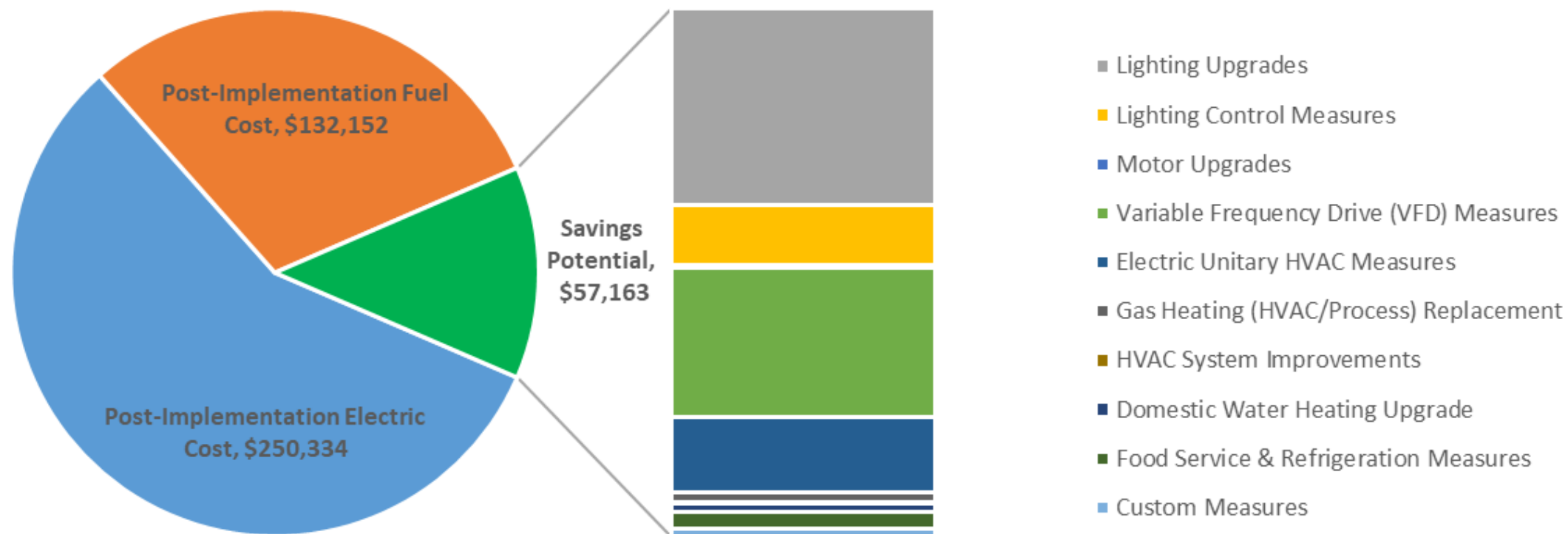
Site Name	ENERGY STAR® Score
All Sites	N/A



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

ALL OPPORTUNITIES

Savings Potential



ALL OPPORTUNITIES (1 OF 2)

#	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		184,778	37.6	-35.4	\$21,303	\$70,390	\$8,390	\$62,000	2.9	181,925
ECM 1	Install LED Fixtures	113,756	23.9	-22.1	\$11,628	\$46,280	\$5,140	\$41,140	3.5	111,961
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	13,168	2.9	-2.7	\$1,318	\$5,460	\$610	\$4,850	3.7	12,947
ECM 3	Retrofit Fixtures with LED Lamps	57,854	10.8	-10.6	\$8,357	\$18,650	\$2,640	\$16,010	1.9	57,017
Lighting Control Measures		43,896	10.6	-9.3	\$6,459	\$54,850	\$9,690	\$45,160	7.0	43,116
ECM 4	Install Occupancy Sensor Lighting Controls	38,735	9.7	-8.2	\$5,701	\$48,370	\$5,910	\$42,460	7.4	38,048
ECM 5	Install High/Low Lighting Controls	5,160	0.9	-1.1	\$758	\$6,480	\$3,780	\$2,700	3.6	5,068
Motor Upgrades		1,552	0.5	0.0	\$250	\$5,400	\$0	\$5,400	21.6	1,562
ECM 6	Premium Efficiency Motors	1,552	0.5	0.0	\$250	\$5,400	\$0	\$5,400	21.6	1,562
Variable Frequency Drive (VFD) Measures		137,138	29.1	10.4	\$16,165	\$122,200	\$10,400	\$111,800	6.9	139,319
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	10,345	2.9	0.0	\$1,696	\$7,500	\$1,100	\$6,400	3.8	10,417
ECM 8	Install VFDs on Chilled Water Pumps	87,148	18.5	0.0	\$9,923	\$59,400	\$4,700	\$54,700	5.5	87,758
ECM 9	Install VFDs on Heating Water Pumps	5,214	1.6	0.0	\$841	\$26,300	\$2,200	\$24,100	28.7	5,250
ECM 10	Install VFDs on Kitchen Hood Fan Motors	7,693	0.0	10.4	\$983	\$8,600	\$200	\$8,400	8.5	8,968
ECM 11	Install VFDs on Process Pumps	26,738	6.1	0.0	\$2,723	\$20,400	\$2,200	\$18,200	6.7	26,925
Unitary HVAC Measures		57,859	12.7	8.8	\$8,147	\$116,800	\$5,900	\$110,900	13.6	59,292
ECM 12	Install High Efficiency Air Conditioning Units	57,859	12.7	8.8	\$8,147	\$116,800	\$5,900	\$110,900	13.6	59,292

ALL OPPORTUNITIES (2 OF 2)

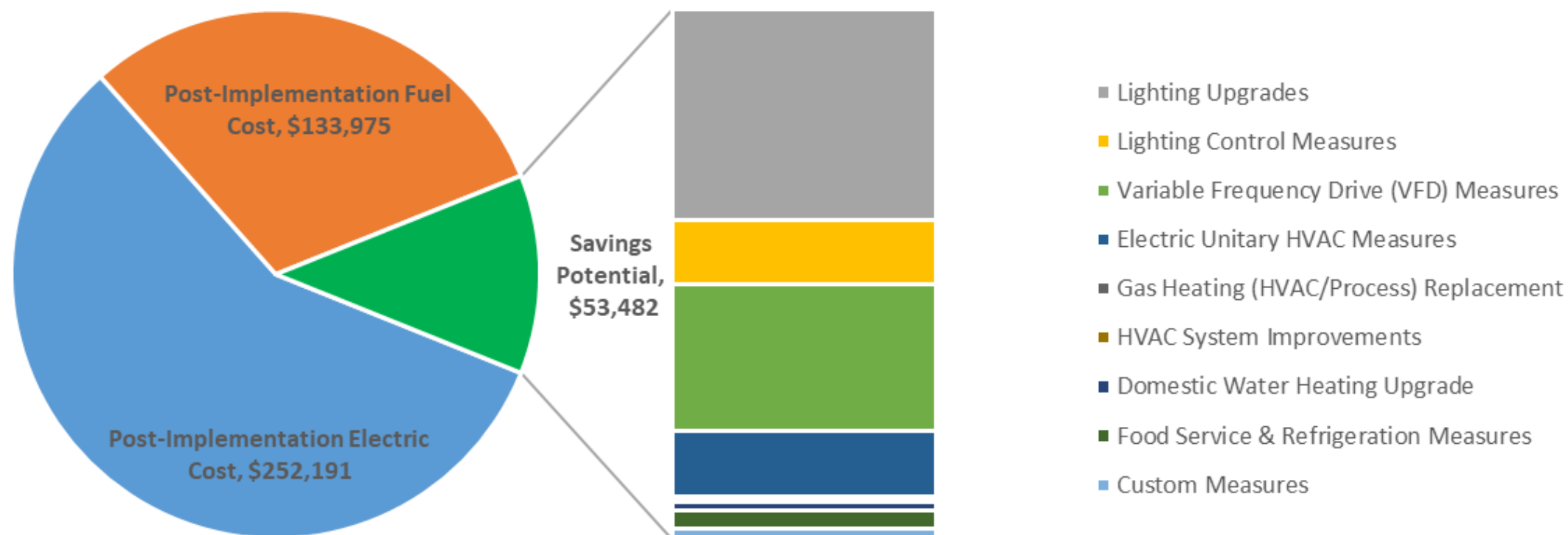
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Gas Heating (HVAC/Process) Replacement		0	0.0	106.4	\$1,185	\$43,600	\$2,400	\$41,200	34.8	12,464
ECM 13	Install High Efficiency Hot Water Boilers	0	0.0	101.4	\$1,116	\$39,500	\$1,900	\$37,600	33.7	11,871
ECM 14	Install High Efficiency Furnaces	0	0.0	5.1	\$69	\$4,100	\$500	\$3,600	52.5	593
HVAC System Improvements		67	0.0	0.0	\$13	\$140	\$10	\$130	10.1	68
ECM 15	Install Pipe Insulation	67	0.0	0.0	\$13	\$140	\$10	\$130	10.1	68
Domestic Water Heating Upgrade		4,057	0.0	22.4	\$922	\$2,890	\$570	\$2,320	2.5	6,709
ECM 16	Install Low-Flow DHW Devices	4,057	0.0	22.4	\$922	\$2,890	\$570	\$2,320	2.5	6,709
Food Service & Refrigeration Measures		11,965	1.4	0.0	\$1,886	\$5,160	\$200	\$4,960	2.6	12,048
ECM 17	Replace Refrigeration Equipment	4,953	0.6	0.0	\$955	\$3,000	\$0	\$3,000	3.1	4,988
ECM 18	Vending Machine Control	7,012	0.8	0.0	\$930	\$2,160	\$200	\$1,960	2.1	7,061
Custom Measures		-2,294	0.0	92.0	\$833	\$34,400	\$0	\$34,400	41.3	8,462
ECM 19	Replace Electric Water Heater with Heat Pump Water Heater	6,312	0.0	0.0	\$1,041	\$10,700	\$0	\$10,700	10.3	6,356
ECM 20	Replace Gas Fired Water Heater with Heat Pump Water Heater	-8,606	0.0	92.0	-\$208	\$23,700	\$0	\$23,700	-113.9	2,106
TOTALS (ALL MEASURES)		439,017	91.9	195.4	\$57,163	\$455,830	\$37,560	\$418,270	7.3	464,965

* - 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).

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		184,778	37.6	-35.4	\$21,303	\$70,390	\$8,390	\$62,000	2.9	181,925
ECM 1	Install LED Fixtures	113,756	23.9	-22.1	\$11,628	\$46,280	\$5,140	\$41,140	3.5	111,961
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	13,168	2.9	-2.7	\$1,318	\$5,460	\$610	\$4,850	3.7	12,947
ECM 3	Retrofit Fixtures with LED Lamps	57,854	10.8	-10.6	\$8,357	\$18,650	\$2,640	\$16,010	1.9	57,017
Lighting Control Measures		43,896	10.6	-9.3	\$6,459	\$54,850	\$9,690	\$45,160	7.0	43,116
ECM 4	Install Occupancy Sensor Lighting Controls	38,735	9.7	-8.2	\$5,701	\$48,370	\$5,910	\$42,460	7.4	38,048
ECM 5	Install High/Low Lighting Controls	5,160	0.9	-1.1	\$758	\$6,480	\$3,780	\$2,700	3.6	5,068
Variable Frequency Drive (VFD) Measures		126,924	27.5	6.0	\$14,766	\$91,200	\$8,100	\$83,100	5.6	128,509
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	10,345	2.9	0.0	\$1,696	\$7,500	\$1,100	\$6,400	3.8	10,417
ECM 8	Install VFDs on Chilled Water Pumps	87,148	18.5	0.0	\$9,923	\$59,400	\$4,700	\$54,700	5.5	87,758
ECM 10	Install VFDs on Kitchen Hood Fan Motors	2,692	0.0	6.0	\$424	\$3,900	\$100	\$3,800	9.0	3,409
ECM 11	Install VFDs on Process/Pool Filtration Pumps	26,738	6.1	0.0	\$2,723	\$20,400	\$2,200	\$18,200	6.7	26,925
Unitary HVAC Measures		50,360	8.7	0.0	\$6,683	\$65,600	\$4,200	\$61,400	9.2	50,712
ECM 12	Install High Efficiency Air Conditioning Units	50,360	8.7	0.0	\$6,683	\$65,600	\$4,200	\$61,400	9.2	50,712
Gas Heating (HVAC/Process) Replacement		0	0.0	44.1	\$486	\$11,900	\$400	\$11,500	23.6	5,166
ECM 13	Install High Efficiency Hot Water Boilers	0	0.0	44.1	\$486	\$11,900	\$400	\$11,500	23.6	5,166
HVAC System Improvements		67	0.0	0.0	\$13	\$140	\$10	\$130	10.1	68
ECM 15	Install Pipe Insulation	67	0.0	0.0	\$13	\$140	\$10	\$130	10.1	68
Domestic Water Heating Upgrade		4,057	0.0	22.4	\$922	\$2,890	\$570	\$2,320	2.5	6,709
ECM 16	Install Low-Flow DHW Devices	4,057	0.0	22.4	\$922	\$2,890	\$570	\$2,320	2.5	6,709
Food Service & Refrigeration Measures		11,965	1.4	0.0	\$1,886	\$5,160	\$200	\$4,960	2.6	12,048
ECM 17	Replace Refrigeration Equipment	4,953	0.6	0.0	\$955	\$3,000	\$0	\$3,000	3.1	4,988
ECM 18	Vending Machine Control	7,012	0.8	0.0	\$930	\$2,160	\$200	\$1,960	2.1	7,061
Custom Measures		5,908	0.0	0.0	\$964	\$8,200	\$0	\$8,200	8.5	5,949
ECM 19	Replace Electric Water Heater with Heat Pump Water Heater	5,908	0.0	0.0	\$964	\$8,200	\$0	\$8,200	8.5	5,949
TOTALS		427,954	85.8	27.8	\$53,482	\$310,330	\$31,560	\$278,770	5.2	434,203

* - 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).

BELLEVUE AVE BRANCH LIBRARY

#	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			9,056	3.2	-2	\$1,698	\$2,380	\$140	\$2,240	1.3	8,894
ECM 1	Retrofit Fixtures with LED Lamps	Yes	9,056	3.2	-2	\$1,698	\$2,380	\$140	\$2,240	1.3	8,894
Lighting Control Measures			1,025	0.4	0	\$192	\$1,720	\$250	\$1,470	7.6	1,007
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	1,025	0.4	0	\$192	\$1,720	\$250	\$1,470	7.6	1,007
HVAC System Improvements			67	0.0	0	\$13	\$140	\$10	\$130	10.1	68
ECM 3	Install Pipe Insulation	Yes	67	0.0	0	\$13	\$140	\$10	\$130	10.1	68
Domestic Water Heating Upgrade			254	0.0	0	\$48	\$30	\$10	\$20	0.4	255
ECM 4	Install Low-Flow DHW Devices	Yes	254	0.0	0	\$48	\$30	\$10	\$20	0.4	255
Custom Measures			404	0.0	0	\$77	\$2,500	\$0	\$2,500	32.5	407
ECM 5	Replace Electric Water Heater with Heat Pump Water Heater	No	404	0.0	0	\$77	\$2,500	\$0	\$2,500	32.5	407
TOTALS (COST EFFECTIVE MEASURES)			10,401	3.6	-2	\$1,951	\$4,270	\$410	\$3,860	2.0	10,224
TOTALS (ALL MEASURES)			10,805	3.6	-2	\$2,028	\$6,770	\$410	\$6,360	3.1	10,631

* - 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.

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MONTCLAIR ANIMAL SHELTER

#	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			3,154	0.0	0	\$608	\$1,160	\$200	\$960	1.6	3,176
ECM 1	Install LED Fixtures	Yes	3,154	0.0	0	\$608	\$1,160	\$200	\$960	1.6	3,176
Lighting Control Measures			1,755	0.6	0	\$334	\$4,440	\$1,190	\$3,250	9.7	1,724
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	1,206	0.5	0	\$230	\$3,030	\$370	\$2,660	11.6	1,184
ECM 3	Install High/Low Lighting Controls	Yes	549	0.1	0	\$105	\$1,410	\$820	\$590	5.6	539
Unitary HVAC Measures			3,785	2.6	9	\$830	\$34,000	\$1,200	\$32,800	39.5	4,840
ECM 4	Install High Efficiency Air Conditioning Units	No	3,785	2.6	9	\$830	\$34,000	\$1,200	\$32,800	39.5	4,840
Domestic Water Heating Upgrade			0	0.0	1	\$15	\$210	\$50	\$160	10.6	154
ECM 5	Install Low-Flow DHW Devices	Yes	0	0.0	1	\$15	\$210	\$50	\$160	10.6	154
Food Service & Refrigeration Measures			4,953	0.6	0	\$955	\$3,000	\$0	\$3,000	3.1	4,988
ECM 6	Replace Refrigeration Equipment	Yes	4,953	0.6	0	\$955	\$3,000	\$0	\$3,000	3.1	4,988
Custom Measures***			-2,157	0.0	23	-\$154	\$4,700	\$0	\$4,700	-30.5	521
ECM 7	Replace Gas Fired Water Heater with Heat Pump Water Heater***	No	-2,157	0.0	23	-\$154	\$4,700	\$0	\$4,700	-30.5	521
TOTALS (COST EFFECTIVE MEASURES)			9,862	1.2	1	\$1,913	\$8,810	\$1,440	\$7,370	3.9	10,041
TOTALS (ALL MEASURES)			11,490	3.8	33	\$2,589	\$47,510	\$2,640	\$44,870	17.3	15,402

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

*** - Negative payback explained in section 4.6

FIRE HOUSE HEADQUARTERS

#	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			36,059	5.3	-7	\$4,702	\$13,050	\$2,180	\$10,870	2.3	35,447
ECM 1	Retrofit Fixtures with LED Lamps	Yes	36,059	5.3	-7	\$4,702	\$13,050	\$2,180	\$10,870	2.3	35,447
Lighting Control Measures			16,536	2.4	-4	\$2,155	\$11,870	\$2,290	\$9,580	4.4	16,240
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	14,439	2.1	-3	\$1,882	\$9,900	\$1,190	\$8,710	4.6	14,180
ECM 3	Install High/Low Lighting Controls	Yes	2,097	0.3	0	\$273	\$1,970	\$1,100	\$870	3.2	2,060
Variable Frequency Drive (VFD) Measures			2,692	0.0	6	\$424	\$3,900	\$100	\$3,800	9.0	3,409
ECM 4	Install VFDs on Kitchen Hood Fan Motors	Yes	2,692	0.0	6	\$424	\$3,900	\$100	\$3,800	9.0	3,409
Unitary HVAC Measures			50,360	8.7	0	\$6,683	\$65,600	\$4,200	\$61,400	9.2	50,712
ECM 5	Install High Efficiency Air Conditioning Units	Yes	50,360	8.7	0	\$6,683	\$65,600	\$4,200	\$61,400	9.2	50,712
Domestic Water Heating Upgrade			0	0.0	16	\$178	\$760	\$140	\$620	3.5	1,857
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	16	\$178	\$760	\$140	\$620	3.5	1,857
Custom Measures***			-4,530	0.0	48	-\$62	\$4,700	\$0	\$4,700	-75.8	1,059
ECM 7	Replace Gas Fired Water Heater with Heat Pump Water Heater***	No	-4,530	0.0	48	-\$62	\$4,700	\$0	\$4,700	-75.8	1,059
TOTALS			101,117	16.4	59	\$14,081	\$99,880	\$8,910	\$90,970	6.5	108,723

* - 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).

*** - Negative payback explained in section 4.6

FIRE HOUSE STATION #2

#	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 Control Measures			1,574	0.4	0	\$257	\$3,390	\$420	\$2,970	11.6	1,546
ECM1	Install Occupancy Sensor Lighting Controls	Yes	1,574	0.4	0	\$257	\$3,390	\$420	\$2,970	11.6	1,546
Domestic Water Heating Upgrade			0	0.0	1	\$17	\$260	\$50	\$210	12.4	154
ECM2	Install Low-Flow DHW Devices	Yes	0	0.0	1	\$17	\$260	\$50	\$210	12.4	154
Custom Measures***			-431	0.0	5	-\$7	\$2,900	\$0	\$2,900	-414.3	151
ECM3	Replace Gas Fired Water Heater with Heat Pump Water Heater***	No	-431	0.0	5	-\$7	\$2,900	\$0	\$2,900	-414.3	151
TOTALS			1,143	0.4	6	\$266	\$6,550	\$470	\$6,080	22.8	1,852

* - 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).

*** - Negative payback explained in section 4.3

DEPARTMENT OF COMMUNITY SERVICES BUILDINGS

#	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			8,095	1.6	-1	\$1,298	\$1,120	\$60	\$1,060	0.8	8,075
ECM 1	Retrofit Fixtures with LED Lamps	Yes	8,095	1.6	-1	\$1,298	\$1,120	\$60	\$1,060	0.8	8,075
Lighting Control Measures			4,891	2.3	-1	\$777	\$9,510	\$1,120	\$8,390	10.8	4,805
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	4,891	2.3	-1	\$777	\$9,510	\$1,120	\$8,390	10.8	4,805
Motor Upgrades			1,552	0.5	0	\$250	\$5,400	\$0	\$5,400	21.6	1,562
ECM 3	Premium Efficiency Motors	No	1,552	0.5	0	\$250	\$5,400	\$0	\$5,400	21.6	1,562
Variable Frequency Drive (VFD) Measures			5,214	1.6	0	\$841	\$26,300	\$2,200	\$24,100	28.7	5,250
ECM 4	Install VFDs on Heating Water Pumps	No	5,214	1.6	0	\$841	\$26,300	\$2,200	\$24,100	28.7	5,250
Unitary HVAC Measures			830	0.6	0	\$134	\$3,600	\$0	\$3,600	26.9	836
ECM 5	Install High Efficiency Air Conditioning Units	No	830	0.6	0	\$134	\$3,600	\$0	\$3,600	26.9	836
Gas Heating (HVAC/Process) Replacement			0	0.0	57	\$630	\$27,600	\$1,500	\$26,100	41.4	6,705
ECM 6	Install High Efficiency Hot Water Boilers	No	0	0.0	57	\$630	\$27,600	\$1,500	\$26,100	41.4	6,705
Domestic Water Heating Upgrade			1,898	0.0	0	\$306	\$380	\$90	\$290	0.9	1,911
ECM 7	Install Low-Flow DHW Devices	Yes	1,898	0.0	0	\$306	\$380	\$90	\$290	0.9	1,911
Food Service & Refrigeration Measures			1,954	0.2	0	\$315	\$540	\$50	\$490	1.6	1,968
ECM 8	Vending Machine Control	Yes	1,954	0.2	0	\$315	\$540	\$50	\$490	1.6	1,968
Custom Measures			1,688	0.0	0	\$272	\$4,200	\$0	\$4,200	15.4	1,700
ECM 9	Replace Electric Water Heater with Heat Pump Water Heater	Yes	1,688	0.0	0	\$272	\$4,200	\$0	\$4,200	15.4	1,700
TOTALS (COST EFFECTIVE MEASURES)			18,526	4.1	-2	\$2,969	\$15,750	\$1,320	\$14,430	4.9	18,459
TOTALS (ALL MEASURES)			26,121	6.7	56	\$4,824	\$78,650	\$5,020	\$73,630	15.3	32,812

* - 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).

FIRE HOUSE STATION #3

#	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			948	0.2	0	\$163	\$300	\$20	\$280	1.7	931
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	89	0.0	0	\$15	\$60	\$0	\$60	3.9	88
ECM 2	Retrofit Fixtures with LED Lamps	Yes	859	0.2	0	\$148	\$240	\$20	\$220	1.5	843
Lighting Control Measures			1,194	0.3	0	\$205	\$1,770	\$220	\$1,550	7.6	1,173
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,194	0.3	0	\$205	\$1,770	\$220	\$1,550	7.6	1,173
Unitary HVAC Measures			2,500	0.6	0	\$437	\$10,800	\$500	\$10,300	23.6	2,517
ECM 4	Install High Efficiency Air Conditioning Units	No	2,500	0.6	0	\$437	\$10,800	\$500	\$10,300	23.6	2,517
Gas Heating (HVAC/Process) Replacement			0	0.0	5	\$69	\$4,100	\$500	\$3,600	52.5	593
ECM 5	Install High Efficiency Furnaces	No	0	0.0	5	\$69	\$4,100	\$500	\$3,600	52.5	593
Domestic Water Heating Upgrade			0	0.0	1	\$8	\$130	\$20	\$110	13.6	70
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	1	\$8	\$130	\$20	\$110	13.6	70
Custom Measures***			-194	0.0	2	-\$7	\$3,800	\$0	\$3,800	-542.9	39
ECM 7	Replace Gas Fired Water Heater with Heat Pump Water Heater***	No	-194	0.0	2	-\$7	\$3,800	\$0	\$3,800	-542.9	39
TOTALS (COST EFFECTIVE MEASURES)			2,142	0.4	0	\$376	\$2,200	\$260	\$1,940	5.2	2,173
TOTALS (ALL MEASURES)			4,448	1.1	7	\$875	\$20,900	\$1,260	\$19,640	22.5	5,322

* - 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).

*** - Negative payback explained in section 4.6

CLARY ANDERSON ARENA

#	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			125,358	27.1	-25	\$12,490	\$51,330	\$5,670	\$45,660	3.7	123,296
ECM 1	Install LED Fixtures	Yes	110,602	23.9	-22	\$11,020	\$45,120	\$4,940	\$40,180	3.6	108,786
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	13,079	2.9	-3	\$1,303	\$5,400	\$610	\$4,790	3.7	12,859
ECM 3	Retrofit Fixtures with LED Lamps	Yes	1,677	0.4	0	\$167	\$810	\$120	\$690	4.1	1,652
Lighting Control Measures			3,111	0.7	-1	\$310	\$4,000	\$670	\$3,330	10.8	3,055
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	2,703	0.6	-1	\$269	\$3,720	\$460	\$3,260	12.1	2,655
ECM 5	Install High/Low Lighting Controls	Yes	408	0.1	0	\$41	\$280	\$210	\$70	1.7	400
Variable Frequency Drive (VFD) Measures			102,028	20.9	4	\$10,440	\$64,100	\$6,200	\$57,900	5.5	103,265
ECM 6	Install VFDs on Chilled Water Pumps	Yes	70,288	14.8	0	\$7,158	\$39,000	\$3,900	\$35,100	4.9	70,780
ECM 7	Install VFDs on Kitchen Hood Fan Motors	No	5,001	0.0	4	\$559	\$4,700	\$100	\$4,600	8.2	5,559
ECM 8	Install VFDs on Process/Pool Filtration Pumps	Yes	26,738	6.1	0	\$2,723	\$20,400	\$2,200	\$18,200	6.7	26,925
Gas Heating (HVAC/Process) Replacement			0	0.0	44	\$486	\$11,900	\$400	\$11,500	23.6	5,166
ECM 9	Install High Efficiency Hot Water Boilers	Yes	0	0.0	44	\$486	\$11,900	\$400	\$11,500	23.6	5,166
Domestic Water Heating Upgrade			0	0.0	3	\$37	\$950	\$140	\$810	22.1	389
ECM 10	Install Low-Flow DHW Devices	Yes	0	0.0	3	\$37	\$950	\$140	\$810	22.1	389
Food Service & Refrigeration Measures			3,445	0.4	0	\$351	\$1,350	\$100	\$1,250	3.6	3,469
ECM 11	Vending Machine Control	Yes	3,445	0.4	0	\$351	\$1,350	\$100	\$1,250	3.6	3,469
Custom Measures			-1,294	0.0	14	\$22	\$7,600	\$0	\$7,600	345.5	336
ECM 12	Replace Gas Fired Water Heater with Heat Pump Water Heater	No	-1,294	0.0	14	\$22	\$7,600	\$0	\$7,600	345.5	336
TOTALS (COST EFFECTIVE MEASURES)			228,942	49.1	22	\$23,554	\$128,930	\$13,080	\$115,850	4.9	233,081
TOTALS (ALL MEASURES)			232,649	49.1	40	\$24,135	\$141,230	\$13,180	\$128,050	5.3	238,977

* - 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).

MONTCLAIR MUNICIPAL 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			2,110	0.2	0	\$344	\$1,050	\$120	\$930	2.7	2,106
ECM 1	Retrofit Fixtures with LED Lamps	Yes	2,110	0.2	0	\$344	\$1,050	\$120	\$930	2.7	2,106
Lighting Control Measures			13,809	3.5	-3	\$2,229	\$18,150	\$3,530	\$14,620	6.6	13,568
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	11,703	3.1	-2	\$1,889	\$15,330	\$1,880	\$13,450	7.1	11,498
ECM 3	Install High/Low Lighting Controls	Yes	2,106	0.4	0	\$340	\$2,820	\$1,650	\$1,170	3.4	2,069
Variable Frequency Drive (VFD) Measures			27,205	6.6	0	\$4,461	\$27,900	\$1,900	\$26,000	5.8	27,395
ECM 4	Install VFD on Variable Air Volume (VAV) Fans	Yes	10,345	2.9	0	\$1,696	\$7,500	\$1,100	\$6,400	3.8	10,417
ECM 5	Install VFDs on Chilled Water Pumps	Yes	16,860	3.8	0	\$2,764	\$20,400	\$800	\$19,600	7.1	16,978
Unitary HVAC Measures			384	0.3	0	\$63	\$2,800	\$0	\$2,800	44.5	387
ECM 6	Install High Efficiency Air Conditioning Units	No	384	0.3	0	\$63	\$2,800	\$0	\$2,800	44.5	387
Domestic Water Heating Upgrade			1,905	0.0	0	\$312	\$170	\$70	\$100	0.3	1,919
ECM 7	Install Low-Flow DHW Devices	Yes	1,905	0.0	0	\$312	\$170	\$70	\$100	0.3	1,919
Food Service & Refrigeration Measures			1,612	0.2	0	\$264	\$270	\$50	\$220	0.8	1,623
ECM 8	Vending Machine Control	Yes	1,612	0.2	0	\$264	\$270	\$50	\$220	0.8	1,623
Custom Measures			4,220	0.0	0	\$692	\$4,000	\$0	\$4,000	5.8	4,250
ECM 9	Replace Electric Water Heater with Heat Pump Water Heater	Yes	4,220	0.0	0	\$692	\$4,000	\$0	\$4,000	5.8	4,250
TOTALS (COST EFFECTIVE MEASURES)			50,861	10.5	-3	\$8,302	\$51,540	\$5,670	\$45,870	5.5	50,860
TOTALS (ALL MEASURES)			51,245	10.8	-3	\$8,365	\$54,340	\$5,670	\$48,670	5.8	51,246

* - 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 Best Practices by building

WATER BEST PRACTICES

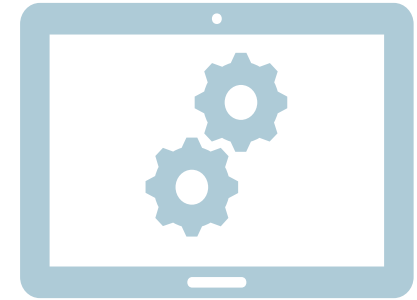
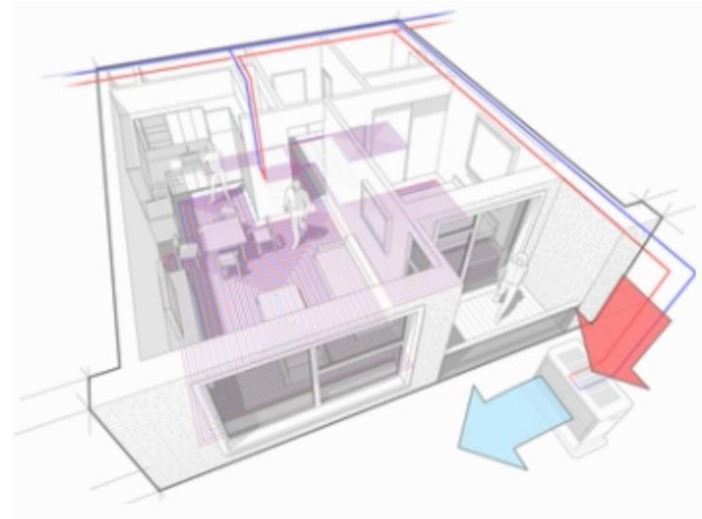


- Leak Detection and Repair
- Toilets and Urinals
- Faucets and Showerheads
- Commercial Kitchen Equipment
- Laundry Equipment
- Cooling Towers
- Steam Boiler System
- Pools and Spas
- Laboratory and Medical Equipment
- Water Metering and Submetering
- Vehicle Washing
- Single Pass Cooling System
- Landscaping and Irrigation
- On-Site Alternative Water Sources

See individual reports for specific Water Best Practices by building

MEASURES FOR FUTURE CONSIDERATION

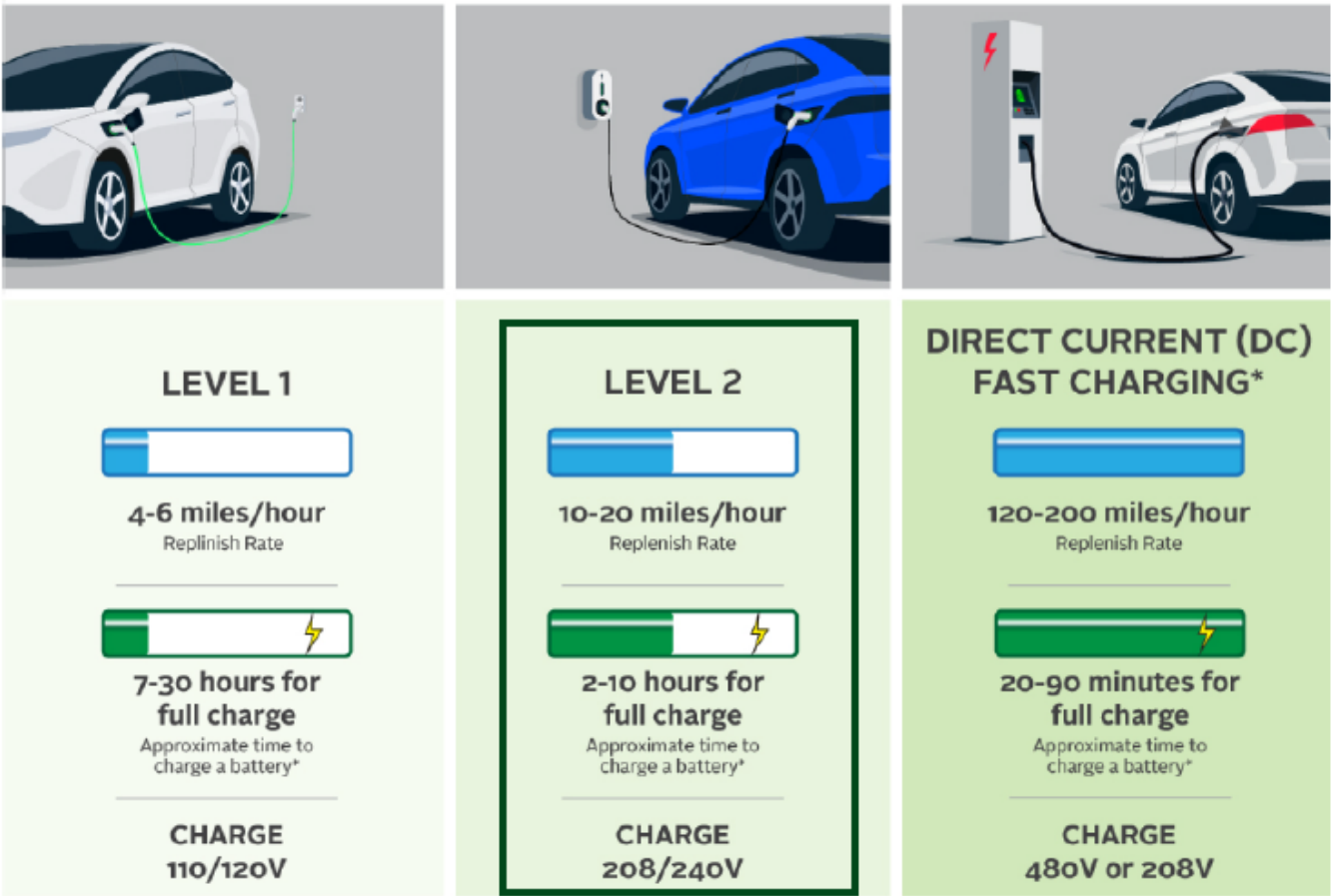
- Upgrade/Replace Building Automation System (BAS)
- Installation of a BAS
- Upgrade to a Heat Pump System
- Heating System Conversion from Steam to Hot Water
- Building Insulation
- Window Replacements



EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV

Know your EV Charging Stations



*dependent on the size of the battery

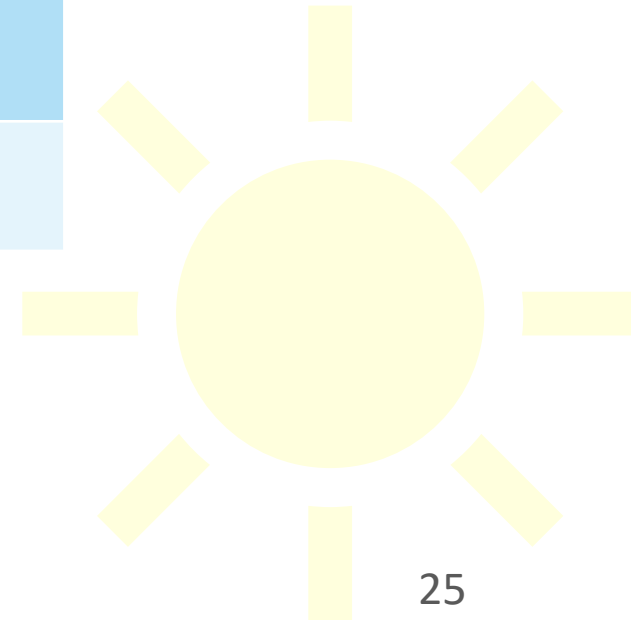
	Township of Montclair
Potential:	Medium to High (refer to reports)



SOLAR ENERGY GENERATION POTENTIAL

NJCleanEnergy.com/renewable-energy

	Dept. of Community Services	Clay Anderson Arena	Municipal Building
<i>Potential:</i>	HIGH	HIGH	Medium
<i>System Potential: (kW)</i>	125	129	54
<i>Electric Generation: (kWh per year)</i>	148,921	153,687	64,334
<i>Displaced Cost: (per year)</i>	\$24,020	\$15,650	\$10,550



FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

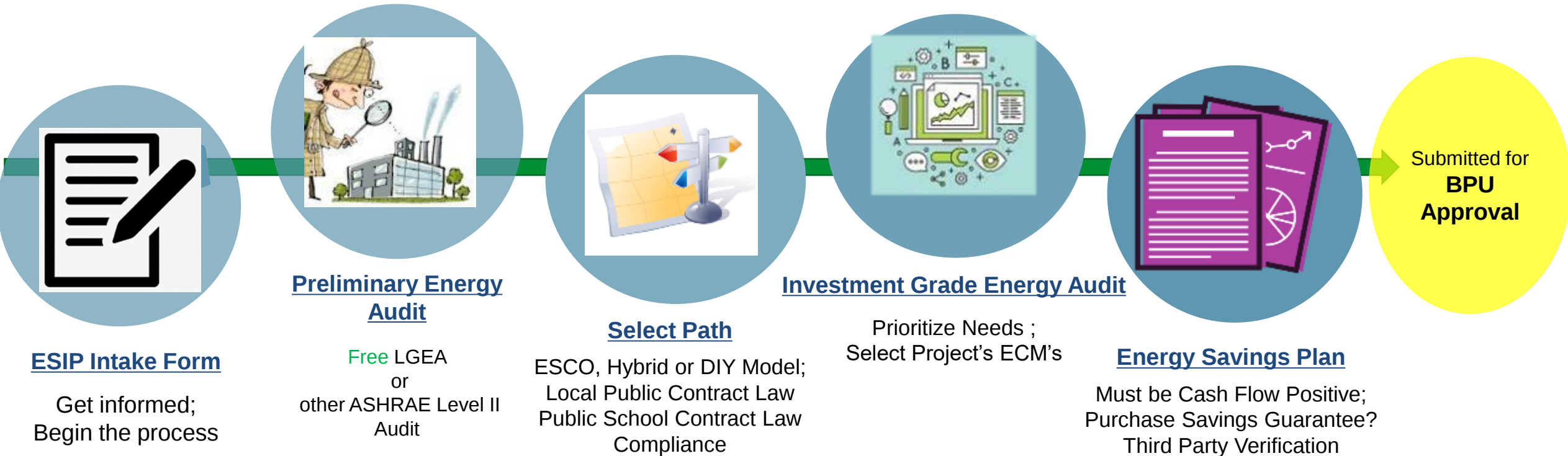
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- 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

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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

ENERGY MANAGEMENT :

- Includes the Building Tune-up (BT), Retro-commissioning (RCx), and Strategic Energy Management (SEM) subprograms. These subprograms offer a comprehensive mix of custom energy-savings measures such as basic HVAC tune-ups, building systems tune-ups, controls' calibration, diagnostic testing, and installation of measures to enhance your building's energy performance and savings.

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



**Other programs may be available to you. Check with your Utility Provider to see a full list of offering and what you may be qualified for.*

UTILITY RUN ENERGY EFFICIENCY PROGRAMS

PSE&G

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THANK YOU

