

New Jersey's Clean Energy Program

LGEA Presentation

Haddon Heights Board of Education

January 7, 2020



INTRODUCTIONS

- *Haddon Heights BOE*
 - Michael Adams – Superintendent
 - Stephen Burns – Business Administrator/Board Secretary
 - Dave Binder – Director of Facilities
- *NJ Clean Energy Program*
 - Brian DeLuca – TRC Director
 - Moussa Traore – TRC Audit Manager
 - Kush Patel – TRC Auditor
 - Sarah Walters – TRC Account Manager
 - Greg Reinert – TRC Outreach Manager
 - Michelle Rossi – ESIP Coordinator (BPU)

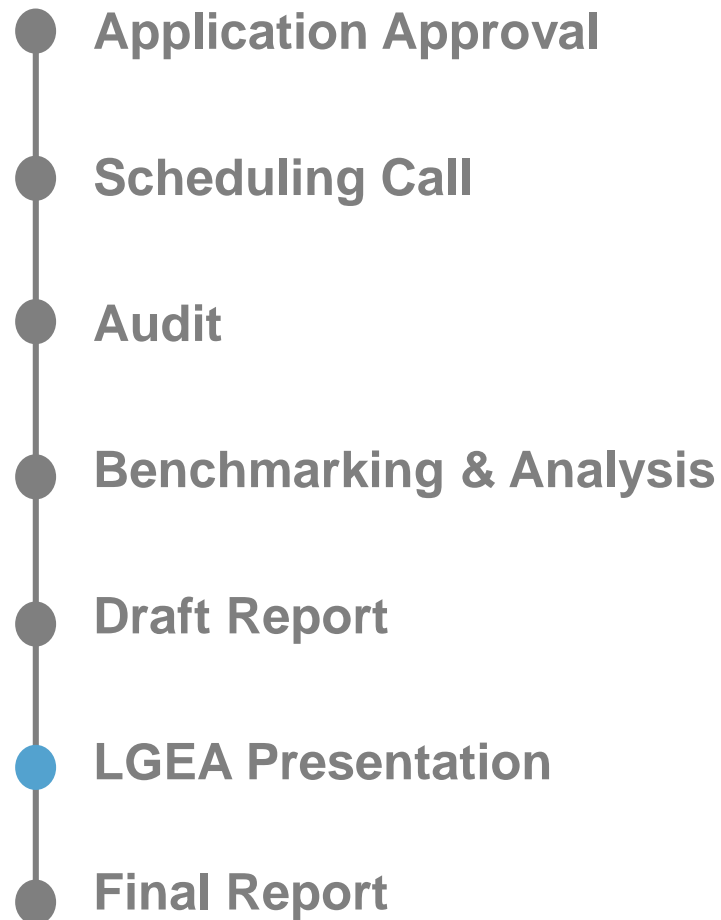


AGENDA

- 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)
- Overview of NJCEP equipment incentives
- Questions regarding the draft audit report
- Next steps for Haddon Heights BOE



LGEA PROCESS



SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Food Service & Refrigeration

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

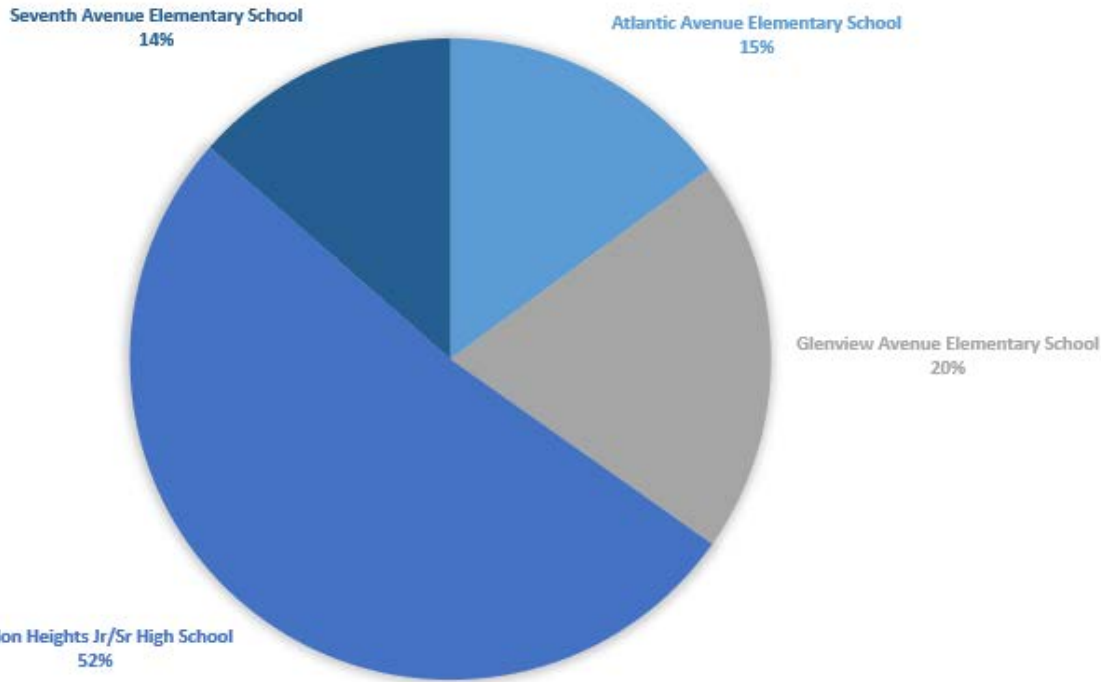
Sites Visited/Analyzed

- Haddon Heights Jr/Sr High School
- Atlantic Ave Elementary School
- Seventh Ave Elementary School
- Glenview Ave Elementary School

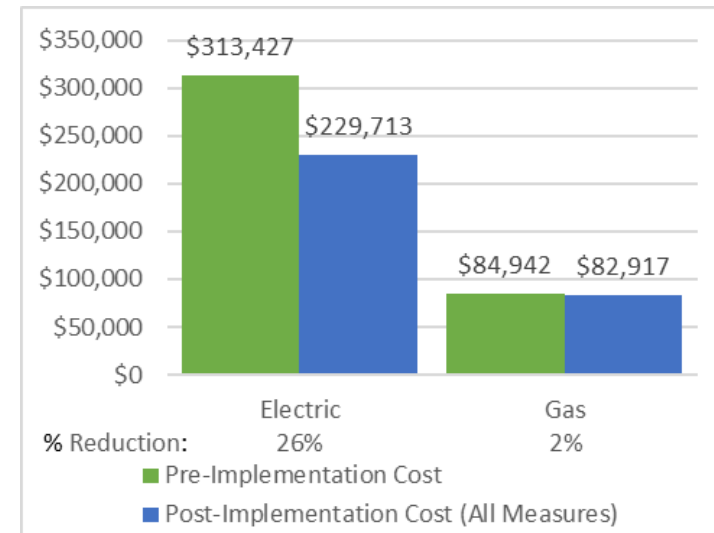


UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING


ENERGY STAR® Statement of Energy Performance

62
ENERGY STAR® Score¹

Seventh Avenue Elementary School

Primary Property Type: K-12 School
 Gross Floor Area (ft²): 36,225
 Built: 1907

For Year Ending: November 30, 2019
 Date Generated: November 18, 2020

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 Seventh Avenue Elementary School 316 7th Avenue Haddon Heights, New Jersey 08035	Property Owner Haddon Heights School District 316-A Seventh Avenue Haddon Heights, NJ 08035 (856) 547-1412	Primary Contact Stephen Bums 316-A Seventh Avenue Haddon Heights, NJ 08035 (856) 547-1412 bumss@hhsd.k12.nj.us
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Property ID: 12353058

Energy Consumption and Energy Use Intensity (EUI)

Site EUI 69.7 kBtu/ft ²	Annual Energy by Fuel	National Median Comparison
	Natural Gas (kBtu) 1,600,560 (63%)	National Median Site EUI (kBtu/ft ²) 80.5
	Electric - Grid (kBtu) 925,230 (37%)	National Median Source EUI (kBtu/ft ²) 136.1
		% Diff from National Median Source EUI -13%
Source EUI 117.9 kBtu/ft ²		Annual Emissions
		Greenhouse Gas Emissions (Metric Tons CO2e/year) 174

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)

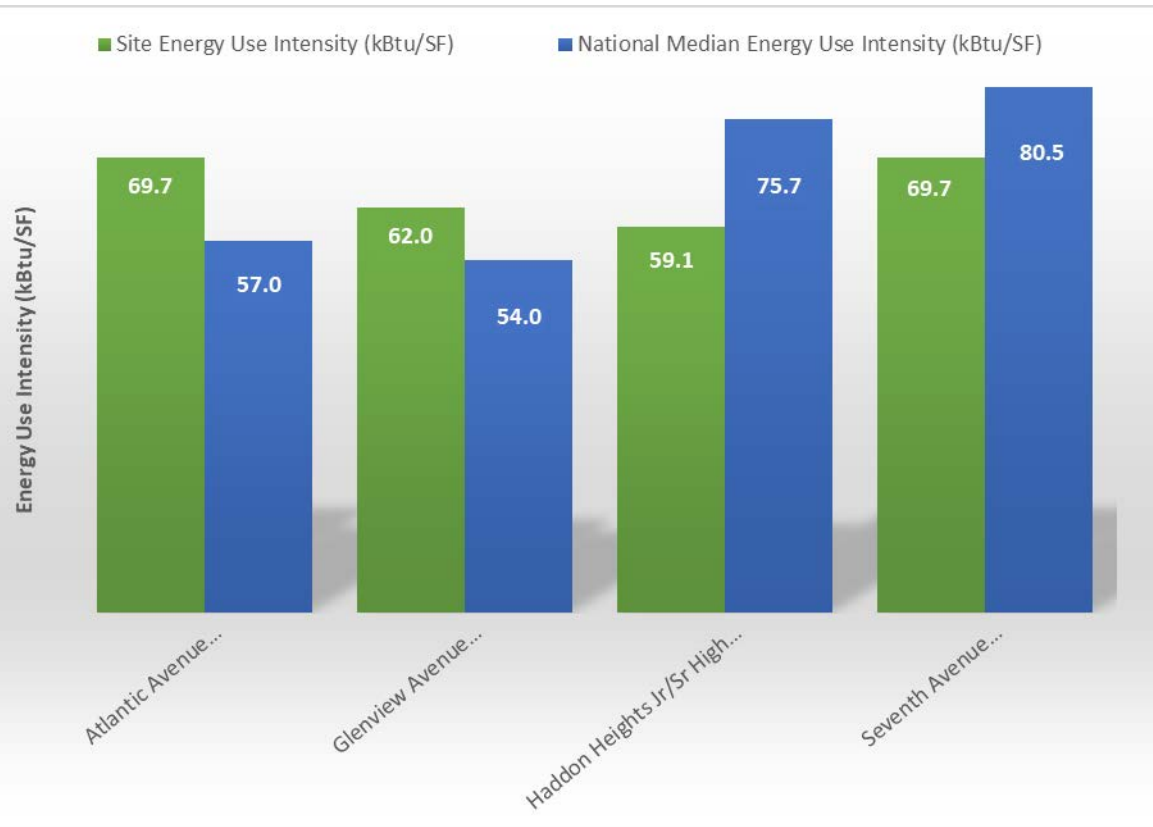
Site EUI
69.7 kBtu/ft²

Source EUI
117.9 kBtu/ft²

National Median Comparison
 National Median Site EUI (kBtu/ft²) 80.5
 National Median Source EUI (kBtu/ft²) 136.1
 % Diff from National Median Source EUI -13%

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.

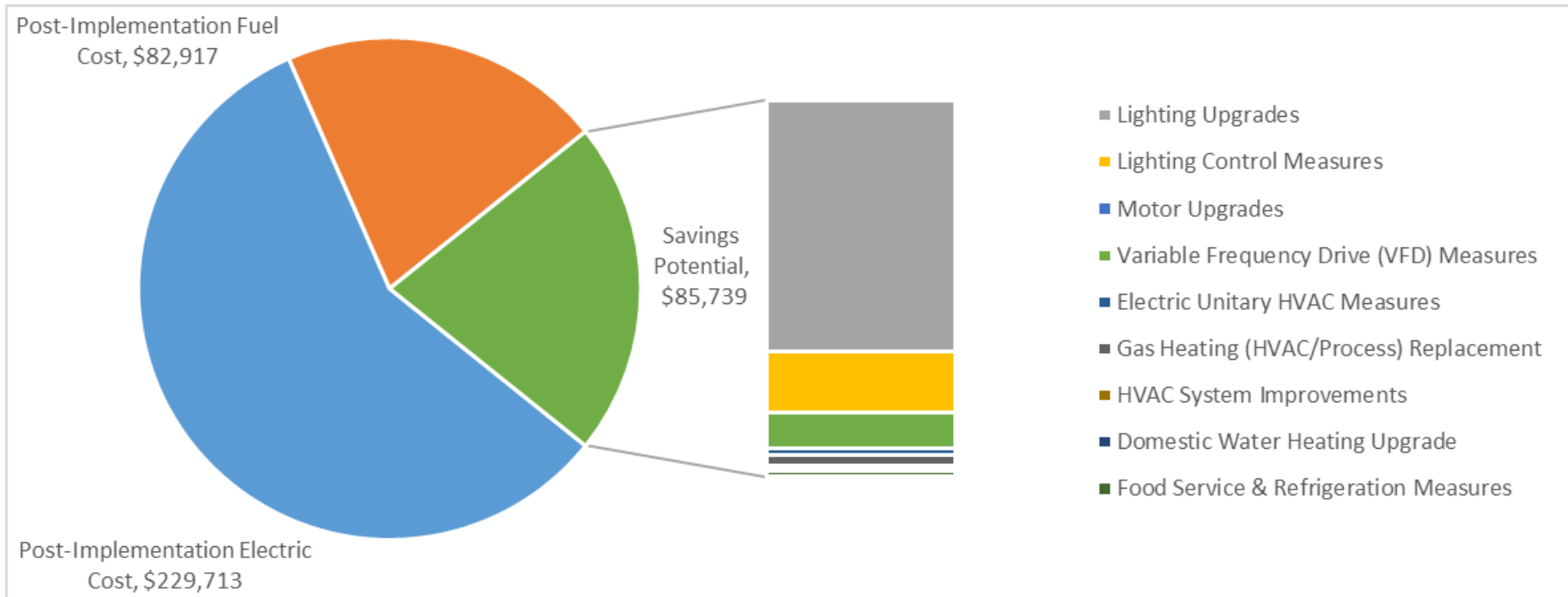
BENCHMARKING



Site Name	ENERGY STAR® Score
Atlantic Avenue Elementary School	30
Glenview Avenue Elementary School	36
Haddon Heights Jr/Sr High School	71
Seventh Avenue Elementary School	62

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		415,278	98.6	-81.9	\$57,081	\$176,299	\$82,112	\$94,187	1.7	408,587
ECM 1	Install LED Fixtures	52,142	5.5	-6.9	\$7,498	\$33,043	\$8,290	\$24,753	3.3	51,697
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	932	0.2	-0.2	\$130	\$401	\$120	\$281	2.2	916
ECM 3	Retrofit Fixtures with LED Lamps	362,204	92.9	-74.8	\$49,453	\$142,855	\$73,702	\$69,153	1.4	355,975
Lighting Control Measures		102,629	26.4	-21.5	\$14,026	\$114,332	\$43,515	\$70,817	5.0	100,834
ECM 4	Install Occupancy Sensor Lighting Controls	87,250	22.5	-18.2	\$11,925	\$94,082	\$24,160	\$69,922	5.9	85,724
ECM 5	Install High/Low Lighting Controls	15,379	3.9	-3.2	\$2,101	\$20,250	\$19,355	\$895	0.4	15,110
Motor Upgrades		888	0.2	0.0	\$130	\$1,131	\$0	\$1,131	8.7	895
ECM 6	Premium Efficiency Motors	888	0.2	0.0	\$130	\$1,131	\$0	\$1,131	8.7	895
Variable Frequency Drive (VFD) Measures		57,457	12.3	0.0	\$8,018	\$114,702	\$9,300	\$105,402	13.1	57,858
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	10,345	2.7	0.0	\$1,517	\$9,627	\$2,300	\$7,327	4.8	10,417
ECM 8	Install VFDs on Constant Volume (CV) Fans	27,291	6.0	0.0	\$3,858	\$30,357	\$4,800	\$25,557	6.6	27,482
ECM 9	Install VFDs on Heating Water Pumps	14,336	1.9	0.0	\$1,912	\$60,536	\$1,600	\$58,936	30.8	14,436
ECM 10	Install Boiler Draft Fan VFDs	5,485	1.8	0.0	\$732	\$14,182	\$600	\$13,582	18.6	5,523
Electric Unitary HVAC Measures		10,740	5.6	2.6	\$1,597	\$41,714	\$5,810	\$35,904	22.5	11,115
ECM 11	Install High Efficiency Air Conditioning Units	10,666	5.6	2.6	\$1,586	\$37,374	\$5,730	\$31,644	20.0	11,040
ECM 12	Install High Efficiency PTAC/PTHP	74	0.0	0.0	\$10	\$4,340	\$80	\$4,260	406.5	75

ALL OPPORTUNITIES

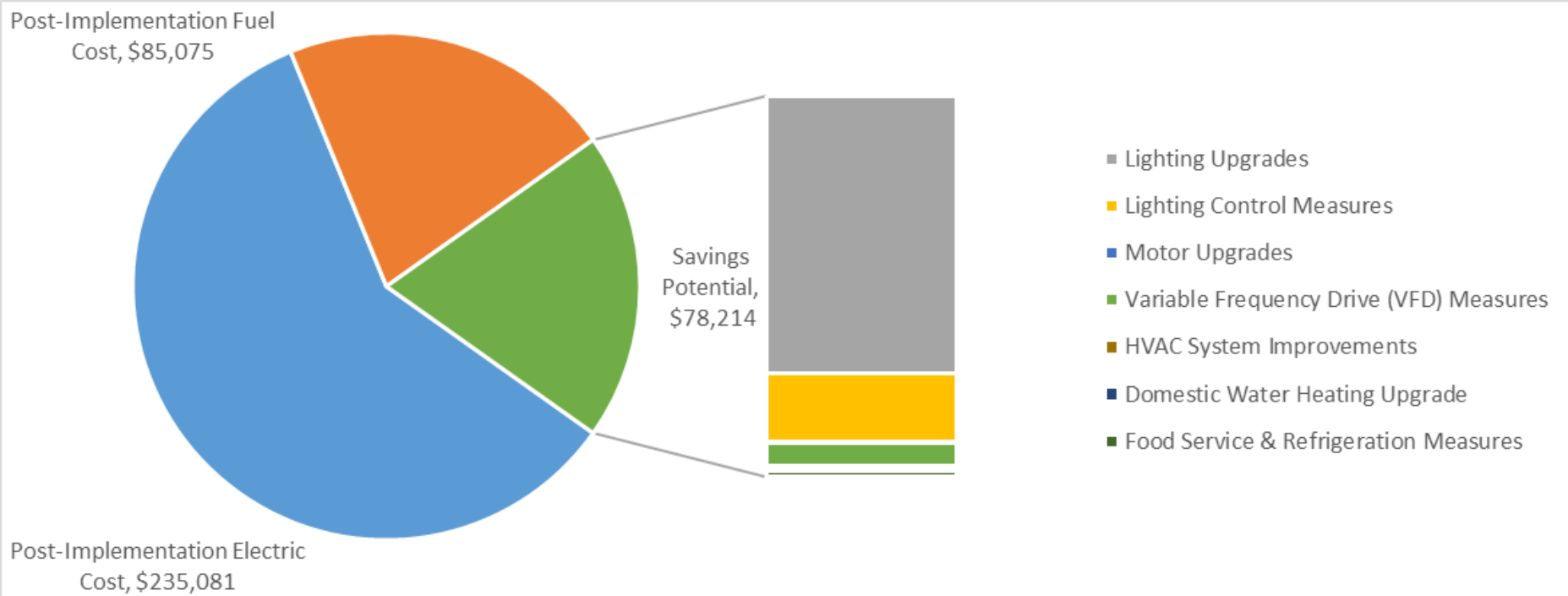
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Gas Heating (HVAC/Process) Replacement		0	0.0	238.6	\$2,213	\$120,476	\$21,159	\$99,317	44.9	27,935
ECM 13	Install High Efficiency Hot Water Boilers	0	0.0	238.6	\$2,213	\$120,476	\$21,159	\$99,317	44.9	27,935
HVAC System Improvements		2,695	0.0	10.5	\$487	\$8,157	\$0	\$8,157	16.7	3,942
ECM 14	Implement Demand Control Ventilation (DCV)	2,695	0.0	10.5	\$487	\$8,157	\$0	\$8,157	16.7	3,942
Domestic Water Heating Upgrade		278	0.0	78.0	\$749	\$19,770	\$2,735	\$17,035	22.8	9,419
ECM 15	Install High Efficiency Gas-Fired Water Heater	0	0.0	26.6	\$247	\$19,311	\$2,276	\$17,035	68.9	3,119
ECM 16	Install Low-Flow DHW Devices	278	0.0	51.4	\$501	\$459	\$459	\$0	0.0	6,299
Food Service & Refrigeration Measures		10,758	1.0	0.0	\$1,438	\$5,853	\$1,060	\$4,793	3.3	10,833
ECM 17	Refrigerator/Freezer Case Electrically Commutated Motors	786	0.1	0.0	\$105	\$607	\$160	\$447	4.3	791
ECM 18	Refrigeration Controls	2,376	0.0	0.0	\$317	\$3,867	\$400	\$3,467	10.9	2,393
ECM 19	Vending Machine Control	7,596	0.9	0.0	\$1,016	\$1,380	\$500	\$880	0.9	7,649
TOTALS		600,724	144.1	226.3	\$85,739	\$602,434	\$165,690	\$436,743	5.1	631,418

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - 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		415,278	98.6	-81.9	\$57,081	\$176,299	\$82,112	\$94,187	1.7	408,587
ECM 1	Install LED Fixtures	52,142	5.5	-6.9	\$7,498	\$33,043	\$8,290	\$24,753	3.3	51,697
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	932	0.2	-0.2	\$130	\$401	\$120	\$281	2.2	916
ECM 3	Retrofit Fixtures with LED Lamps	362,204	92.9	-74.8	\$49,453	\$142,855	\$73,702	\$69,153	1.4	355,975
Lighting Control Measures		102,629	26.4	-21.5	\$14,026	\$114,332	\$43,515	\$70,817	5.0	100,834
ECM 4	Install Occupancy Sensor Lighting Controls	87,250	22.5	-18.2	\$11,925	\$94,082	\$24,160	\$69,922	5.9	85,724
ECM 5	Install High/Low Lighting Controls	15,379	3.9	-3.2	\$2,101	\$20,250	\$19,355	\$895	0.4	15,110
Motor Upgrades		888	0.2	0.0	\$130	\$1,131	\$0	\$1,131	8.7	895
ECM 6	Premium Efficiency Motors	888	0.2	0.0	\$130	\$1,131	\$0	\$1,131	8.7	895
Variable Frequency Drive (VFD) Measures		32,877	7.6	0.0	\$4,740	\$33,332	\$6,750	\$26,582	5.6	33,107
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	10,345	2.7	0.0	\$1,517	\$9,627	\$2,300	\$7,327	4.8	10,417
ECM 8	Install VFDs on Constant Volume (CV) Fans	22,532	4.9	0.0	\$3,223	\$23,705	\$4,450	\$19,255	6.0	22,690
HVAC System Improvements		1,842	0.0	10.5	\$367	\$2,719	\$0	\$2,719	7.4	3,084
ECM 14	Implement Demand Control Ventilation (DCV)	1,842	0.0	10.5	\$367	\$2,719	\$0	\$2,719	7.4	3,084
Domestic Water Heating Upgrade		278	0.0	78.0	\$749	\$19,770	\$2,735	\$17,035	22.8	9,419
ECM 15	Install High Efficiency Gas-Fired Water Heater	0	0.0	26.6	\$247	\$19,311	\$2,276	\$17,035	68.9	3,119
ECM 16	Install Low-Flow DHW Devices	278	0.0	51.4	\$501	\$459	\$459	\$0	0.0	6,299
Food Service & Refrigeration Measures		8,382	1.0	0.0	\$1,121	\$1,987	\$660	\$1,327	1.2	8,440
ECM 17	Refrigerator/Freezer Case Electrically Commutated Motors	786	0.1	0.0	\$105	\$607	\$160	\$447	4.3	791
ECM 19	Vending Machine Control	7,596	0.9	0.0	\$1,016	\$1,380	\$500	\$880	0.9	7,649
TOTALS		562,175	133.8	-14.9	\$78,214	\$349,570	\$135,772	\$213,798	2.7	564,365

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

HADDON HEIGHTS JR/SR HIGH SCHOOL

#	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			192,981	58.9	-40	\$25,397	\$91,068	\$46,172	\$44,896	1.8	189,693
ECM 1	Install LED Fixtures	Yes	3,075	0.0	0	\$410	\$2,089	\$600	\$1,489	3.6	3,097
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	332	0.1	0	\$44	\$195	\$60	\$135	3.1	326
ECM 3	Retrofit Fixtures with LED Lamps	Yes	189,574	58.8	-40	\$24,943	\$88,784	\$45,512	\$43,272	1.7	186,270
Lighting Control Measures			53,550	16.7	-11	\$7,046	\$65,240	\$25,415	\$39,825	5.7	52,613
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	45,552	14.2	-10	\$5,993	\$53,090	\$13,790	\$39,300	6.6	44,755
ECM 5	Install High/Low Lighting Controls	Yes	7,998	2.5	-2	\$1,052	\$12,150	\$11,625	\$525	0.5	7,858
Variable Frequency Drive (VFD) Measures			24,580	4.7	0	\$3,278	\$81,370	\$2,550	\$78,820	24.0	24,752
ECM 6	Install VFDs on Constant Volume (CV) Fans	No	4,759	1.0	0	\$635	\$6,652	\$350	\$6,302	9.9	4,792
ECM 7	Install VFDs on Heating Water Pumps	No	14,336	1.9	0	\$1,912	\$60,536	\$1,600	\$58,936	30.8	14,436
ECM 8	Install Boiler Draft Fan VFDs	No	5,485	1.8	0	\$732	\$14,182	\$600	\$13,582	18.6	5,523
Domestic Water Heating Upgrade			0	0.0	20	\$174	\$172	\$172	\$0	0.0	2,353
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	20	\$174	\$172	\$172	\$0	0.0	2,353
Food Service & Refrigeration Measures			10,416	1.0	0	\$1,389	\$5,623	\$1,060	\$4,563	3.3	10,488
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	786	0.1	0	\$105	\$607	\$160	\$447	4.3	791
ECM 11	Refrigeration Controls	No	2,376	0.0	0	\$317	\$3,867	\$400	\$3,467	10.9	2,393
ECM 12	Vending Machine Control	Yes	7,253	0.8	0	\$967	\$1,150	\$500	\$650	0.7	7,304
TOTALS (COST EFFECTIVE MEASURES)			254,570	76.5	-31	\$33,688	\$158,237	\$72,419	\$85,818	2.5	252,754
TOTALS (ALL MEASURES)			281,526	81.2	-31	\$37,284	\$243,473	\$75,369	\$168,104	4.5	279,899

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

ATLANTIC AVE ELEMENTARY SCHOOL

#	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			86,370	14.3	-17	\$12,507	\$35,484	\$12,278	\$23,206	1.9	84,975
ECM 1	Install LED Fixtures	Yes	36,149	5.4	-7	\$5,238	\$21,067	\$4,500	\$16,567	3.2	35,608
ECM 2	Retrofit Fixtures with LED Lamps	Yes	50,220	8.8	-10	\$7,269	\$14,418	\$7,778	\$6,640	0.9	49,367
Lighting Control Measures			17,028	3.0	-4	\$2,464	\$18,277	\$6,305	\$11,972	4.9	16,730
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	14,784	2.6	-3	\$2,139	\$16,252	\$4,280	\$11,972	5.6	14,525
ECM 4	Install High/Low Lighting Controls	Yes	2,245	0.4	0	\$325	\$2,025	\$2,025	\$0	0.0	2,205
Motor Upgrades			888	0.2	0	\$130	\$1,131	\$0	\$1,131	8.7	895
ECM 5	Premium Efficiency Motors	Yes	888	0.2	0	\$130	\$1,131	\$0	\$1,131	8.7	895
Variable Frequency Drive (VFD) Measures			10,345	2.7	0	\$1,517	\$9,627	\$2,300	\$7,327	4.8	10,417
ECM 6	Install VFD on Variable Air Volume (VAV) Fans	Yes	10,345	2.7	0	\$1,517	\$9,627	\$2,300	\$7,327	4.8	10,417
Unitary HVAC Measures			10,406	5.5	3	\$1,549	\$36,671	\$5,730	\$30,941	20.0	10,778
ECM 7	Install High Efficiency Air Conditioning Units	No	10,406	5.5	3	\$1,549	\$36,671	\$5,730	\$30,941	20.0	10,778
Gas Heating (HVAC/Process) Replacement			0	0.0	132	\$1,214	\$59,817	\$10,965	\$48,852	40.2	15,417
ECM 8	Install High Efficiency Hot Water Boilers	No	0	0.0	132	\$1,214	\$59,817	\$10,965	\$48,852	40.2	15,417
HVAC System Improvements			1,842	0.0	10	\$367	\$2,719	\$0	\$2,719	7.4	3,084
ECM 9	Implement Demand Control Ventilation (DCV)	Yes	1,842	0.0	10	\$367	\$2,719	\$0	\$2,719	7.4	3,084
Domestic Water Heating Upgrade			0	0.0	22	\$201	\$1,869	\$626	\$1,243	6.2	2,549
ECM 10	Install High Efficiency Gas-Fired Water Heater	Yes	0	0.0	14	\$131	\$1,769	\$526	\$1,243	9.5	1,660
ECM 11	Install Low-Flow DHW Devices	Yes	0	0.0	8	\$70	\$100	\$100	\$0	0.0	889
TOTALS (COST EFFECTIVE MEASURES)			116,473	20.2	12	\$17,185	\$69,108	\$21,509	\$47,599	2.8	118,650
TOTALS (ALL MEASURES)			126,879	25.7	146	\$19,949	\$165,595	\$38,204	\$127,391	6.4	144,845

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

SEVENTH AVE ELEMENTARY SCHOOL

#	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			58,304	11.3	-11	\$8,358	\$24,470	\$11,514	\$12,956	1.6	57,449
ECM 1	Install LED Fixtures	Yes	7,368	0.0	0	\$1,067	\$5,565	\$1,790	\$3,775	3.5	7,403
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	600	0.1	0	\$86	\$206	\$60	\$146	1.7	589
ECM 3	Retrofit Fixtures with LED Lamps	Yes	50,336	11.2	-11	\$7,205	\$18,699	\$9,664	\$9,035	1.3	49,456
Lighting Control Measures			14,203	3.1	-3	\$2,033	\$17,730	\$6,380	\$11,350	5.6	13,954
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	11,882	2.6	-2	\$1,701	\$14,580	\$3,500	\$11,080	6.5	11,674
ECM 5	Install High/Low Lighting Controls	Yes	2,321	0.5	0	\$332	\$3,150	\$2,880	\$270	0.8	2,280
Variable Frequency Drive (VFD) Measures			11,106	2.3	0	\$1,611	\$13,107	\$2,250	\$10,857	6.7	11,184
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	11,106	2.3	0	\$1,611	\$13,107	\$2,250	\$10,857	6.7	11,184
HVAC System Improvements			73	0.0	0	\$11	\$2,719	\$0	\$2,719	257.8	73
ECM 7	Implement Demand Control Ventilation (DCV)	No	73	0.0	0	\$11	\$2,719	\$0	\$2,719	257.8	73
Domestic Water Heating Upgrade			0	0.0	8	\$68	\$57	\$57	\$0	0.0	889
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	8	\$68	\$57	\$57	\$0	0.0	889
TOTALS (COST EFFECTIVE MEASURES)			83,613	16.8	-6	\$12,070	\$55,364	\$20,201	\$35,163	2.9	83,476
TOTALS (ALL MEASURES)			83,686	16.8	-6	\$12,080	\$58,083	\$20,201	\$37,882	3.1	83,549

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

GLENVIEW AVE ELEMENTARY SCHOOL

#	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			77,624	14.1	-14	\$10,819	\$25,276	\$12,148	\$13,128	1.2	76,470
ECM 1	Install LED Fixtures	Yes	5,549	0.0	0	\$783	\$4,322	\$1,400	\$2,922	3.7	5,588
ECM 2	Retrofit Fixtures with LED Lamps	Yes	72,074	14.1	-14	\$10,036	\$20,955	\$10,748	\$10,207	1.0	70,882
Lighting Control Measures			17,849	3.6	-4	\$2,484	\$13,085	\$5,415	\$7,670	3.1	17,537
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	15,032	3.0	-3	\$2,092	\$10,160	\$2,590	\$7,570	3.6	14,769
ECM 4	Install High/Low Lighting Controls	Yes	2,816	0.6	-1	\$392	\$2,925	\$2,825	\$100	0.3	2,767
Variable Frequency Drive (VFD) Measures			11,426	2.6	0	\$1,612	\$10,598	\$2,200	\$8,398	5.2	11,506
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	11,426	2.6	0	\$1,612	\$10,598	\$2,200	\$8,398	5.2	11,506
Unitary HVAC Measures			334	0.1	0	\$47	\$5,043	\$80	\$4,963	105.2	337
ECM 6	Install High Efficiency Air Conditioning Units	No	260	0.1	0	\$37	\$703	\$0	\$703	19.2	262
ECM 7	Install High Efficiency PTAC/PTHP	No	74	0.0	0	\$10	\$4,340	\$80	\$4,260	406.4	75
Gas Heating (HVAC/Process) Replacement			0	0.0	107	\$999	\$60,659	\$10,194	\$50,465	50.5	12,518
ECM 8	Install High Efficiency Hot Water Boilers	No	0	0.0	107	\$999	\$60,659	\$10,194	\$50,465	50.5	12,518
HVAC System Improvements			780	0.0	0	\$110	\$2,719	\$0	\$2,719	24.7	785
ECM 9	Implement Demand Control Ventilation (DCV)	No	780	0.0	0	\$110	\$2,719	\$0	\$2,719	24.7	785
Domestic Water Heating Upgrade			278	0.0	29	\$306	\$17,671	\$1,879	\$15,792	51.6	3,628
ECM 10	Install High Efficiency Gas-Fired Water Heater	Yes	0	0.0	12	\$116	\$17,542	\$1,750	\$15,792	135.7	1,459
ECM 11	Install Low-Flow DHW Devices	Yes	278	0.0	16	\$190	\$129	\$129	\$0	0.0	2,169
Food Service & Refrigeration Measures			343	0.0	0	\$48	\$230	\$0	\$230	4.8	345
ECM 12	Vending Machine Control	Yes	343	0.0	0	\$48	\$230	\$0	\$230	4.8	345
TOTALS (COST EFFECTIVE MEASURES)			107,519	20.3	10	\$15,270	\$66,861	\$21,642	\$45,219	3.0	109,485
TOTALS (ALL MEASURES)			108,633	20.4	117	\$16,426	\$135,282	\$31,916	\$103,366	6.3	123,125

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - 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

- **Installation of an Energy Management System**

SOLAR ENERGY GENERATION POTENTIAL

	High School	Atlantic Ave	Seventh Ave	Glenview Ave
<i>Potential:</i>	HIGH	HIGH	Medium	HIGH
<i>System Potential: (kW)</i>	351	59	55	155
<i>Electric Generation: (kWh per year)</i>	418,171	70,291	65,525	184,662
<i>Displaced Cost: (per year)</i>	\$55,770	\$10,310	\$9,500	\$26,060

Transition Incentive (TI) Program:

<https://www.njcleanenergy.com/renewable-energy/programs/transition-incentive-program>

Community Solar Energy Pilot Program:

<http://www.NJCleanEnergy.com/CommunitySolar>

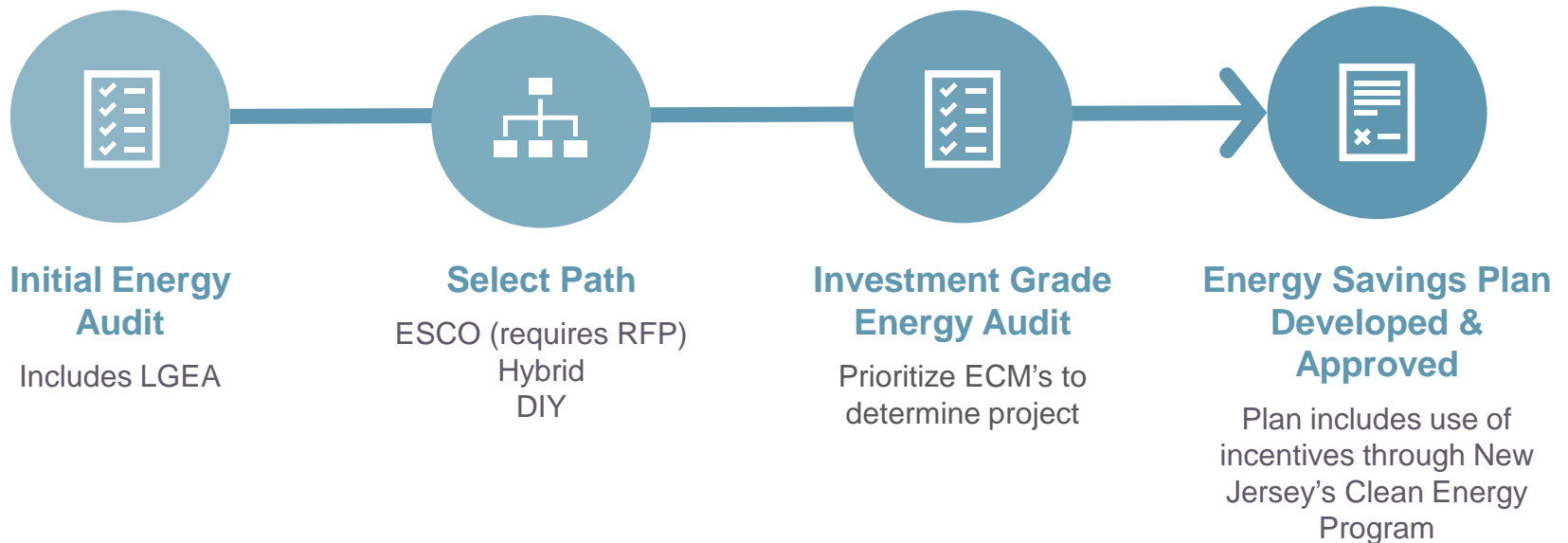
FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the NJBPU
- Project is paid for with the value of its own energy savings
- 15 or 20-year repayment term
- NJCEP incentives/rebates are layered within an ESIP
- No upfront capital expenses
- Doesn't require voter approval



FINANCING MECHANISM: ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

FOR MORE INFORMATION

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CLEAN ENERGY PROGRAM PORTFOLIO

ELIGIBLE SECTORS

Commercial, Industrial, Government, Non-Profit, Institutional and Multifamily

INCENTIVE PROGRAMS

Equipment Rebates:

- **SmartStart**
- **Customer Tailored Energy Efficiency Pilot (CTEEP)**
- **Direct Install**
- Large Energy Users

Whole Buildings:

- Pay for Performance

Energy Generation:

- Combined Heat and Power – Fuel Cells

OTHER PROGRAMS

Renewable Energy Generation:

- **Transition Incentive (TI) Program**
- **Community Solar**

RECOMMENDED NJCEP INCENTIVES PER BUILDING

Haddon Heights BOE	Direct Install	SmartStart	CTEEP
Haddon Heights Jr/Sr High School		X	X
Atlantic Ave Elementary School	X	X	X
Seventh Ave Elementary School	X	X	X
Glenview Ave Elementary School	X	X	X



DIRECT INSTALL

NJCleanEnergy.com/DI



What is DI: Turn-key retrofit program to replace outdated and inefficient equipment, including lighting, HVAC, refrigeration, etc.

Qualifications: Average electric peak demand <200 kW in the previous 12 months

- About:**
- Pre-approved participating contractors provide support and process paperwork
 - Incentives paid directly to the contractor
 - Fast project turnaround time (4-6 months)

- Incentives:**
- \$125,000 incentive funding per project/building ([\\$250K](#) UEZ/OZ/Local Govt./**K-12 Public Schools**), or
 - \$250,000 entity cap ([\\$4MM](#) UEZ/OZ/Local Govt./[K-12 Public Schools](#))

DIRECT INSTALL

NJCleanEnergy.com/DI

Facilities in Urban Enterprise Zones (UEZ), Opportunity Zones (OZ), Local Governments, and K-12 public schools:

INCENTIVE FUNDING

Up to **80%** of installed cost is paid directly to the contractor

CUSTOMER

20% of installed cost

All other eligible facilities:

INCENTIVE FUNDING

Up to **70%** of installed cost is paid directly to the contractor

CUSTOMER

30% of installed cost



DIRECT INSTALL

NJCleanEnergy.com/DI

Participating Contractor

Hutchinson Mechanical Services

Pete Hatton

856-429-5828 x259

petehatton@hutchbiz.com



SMARTSTART

NJCleanEnergy.com/SSB

What is SSB: Individual high efficiency equipment rebates for new construction, renovation, remodeling, equipment replacement

Qualifications: • All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- Prescriptive and custom designed measures
- Pre-approval required only for lighting projects with incentives >\$100,000 and all custom projects
- For measures not requiring pre-approval, applications must be submitted to the program within one year of purchase.

Incentives:

- Prescriptive: \$500,000 cap for each electric or gas account
- Custom, lesser of the following:
 - \$0.16/kWh and/or \$1.60/Therm saved annually
 - 50% of incremental installed cost
 - Buy-down to 1 year payback based on incremental cost and savings



SMARTSTART

NJCleanEnergy.com/SSB



PRESCRIPTIVE INCENTIVES

- Electric Chillers
- Gas Cooling
- Electric Unitary HVAC
- Ground Source Heat Pumps
- Gas Heating
- Variable Frequency Drives
- Gas Water Heating
- Lighting/Lighting Controls
- Refrigeration Doors
- Refrigeration Controls
- Food Service Equipment
- Refrigerator/Freezer Motors

DOUBLE INCENTIVES
for OZ/UEZ, local
government (munis &
counties), K-12 public
school, or designated
as affordable housing



CUSTOM INCENTIVES

- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Must meet code for retrofit projects or exceed code for new construction
- Project pre and post inspection required



CUSTOMER TAILORED ENERGY EFFICIENCY PILOT

NJCleanEnergy.com/CTEEP

What is CTEEP: A streamlined/single application process for participants submitting multiple different technology types.

Qualifications:

- All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- On site assistance available
- Additional technical incentive available to offset soft costs associated with developing and planning custom projects

Incentives:

- Up to \$500,000 for each electric or gas account
- Technical assistance incentives for custom project evaluation (up to \$10K)

**SAME INCENTIVE
VALUES AS
SMARTSTART**

CTEEP: CUSTOMER TAILORED ENERGY EFFICIENCY PILOT

NJCleanEnergy.com/CTEEP



**SAME INCENTIVE
VALUES AS
SMARTSTART**



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QUESTIONS

