

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Swedesboro-Woolwich School District

TRC Energy Services

January 10, 2019

Introductions



Swedesboro-Woolwich School District

- Chris DeStratis – Business Administrator
- Bill Murray – Maintenance Supervisor

Garrison Architects

- Robert Garrison – *Architect*

NJ Clean Energy Program

- Dianne Solomon, BPU Commissioner
- Brian DeLuca, CEM – Program Manager
- Yagna Otia, CEM – TRC Auditor
- Elizabeth Ebinger – TRC Account Manager
- Mike Thulen – ESIP Coordinator

Agenda



- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified
- Questions or concerns regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Swedesboro-Woolwich School District

LGEA Process



- Application Approval
- Scheduling Call
- Audit
- Benchmarking & Analysis
- Draft Report
- Exit Meeting Presentation
- Final Report



Site Visit and Utility Analysis

Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Food Service Equipment

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Electric Demand and Costs

Sites Visited/Analyzed

- Walter Hill School
- Margaret C. Clifford School
- Governor Charles C. Stratton School
- General Charles G. Harker School

Benchmarking



Walter Hill School

ENERGY STAR® Statement of Energy Performance

85

Walter Hill School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 71,374
Built: 1922

For Year Ending: January 31, 2018
Date Generated: October 22, 2018

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 Walter Hill School 1815 Kings Hwy. Swedesboro, New Jersey 08085	Property Owner SWEDESORO-WOOLWICH BOARD OF EDUCATION 15 Fredrick Boulevard Woolwich Twp, NJ 08085 () - () - ()	Primary Contact Christopher DeStratis 15 Fredrick Boulevard Woolwich Twp, NJ 08085 856-241-1552 x 1008 odestratis@swsdk0.com
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Property ID: 6571001

Energy Consumption and Energy Use Intensity (EUI)

Site EUI 39.3 kBtu/ft²	Annual Energy by Fuel Natural Gas (kBtu) 1,023,837 (36%) Electric - Grid (kBtu) 1,779,814 (64%)	National Median Comparison National Median Site EUI (kBtu/ft²) 59 National Median Source EUI (kBtu/ft²) 127.4 % Diff from National Median Source EUI -33%
Source EUI 84.9 kBtu/ft²	Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 235	

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

() - () - ()

Professional Engineer Stamp
(if applicable)

Building Name	ENERGY STAR Score
Walter Hill School	85
Margaret C. Clifford School	N/A
Governor Charles C. Stratton School	80
General Charles G. Harker School	81

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.

All Opportunities



Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades	363,401	103.7	-65.3	\$57,619	\$291,267	\$46,693	\$244,574	4.2	358,295
Install LED Fixtures	70,086	10.4	-4.6	\$11,278	\$130,166	\$10,745	\$119,421	10.6	70,036
Retrofit Fixtures with LED Lamps	293,315	93.3	-60.7	\$46,341	\$161,101	\$35,948	\$125,153	2.7	288,259
Lighting Control Measures	95,130	30.0	-19.9	\$15,044	\$121,622	\$21,605	\$100,017	6.6	93,466
Install Occupancy Sensor Lighting Controls	82,059	26.0	-17.2	\$12,971	\$109,422	\$13,070	\$96,352	7.4	80,624
Install High/Low Lighting Controls	13,071	4.1	-2.7	\$2,072	\$12,200	\$8,535	\$3,665	1.8	12,842
Motor Upgrades	7,687	3.3	0.0	\$1,222	\$61,893	\$0	\$61,893	50.6	7,741
Premium Efficiency Motors	7,687	3.3	0.0	\$1,222	\$61,893	\$0	\$61,893	50.6	7,741
Variable Frequency Drive (VFD) Measures	108,973	40.7	0.0	\$17,450	\$162,289	\$12,275	\$150,014	8.6	109,735
Install VFD on Variable Air Volume (VAV) Fans	51,190	30.2	0.0	\$8,133	\$93,418	\$6,975	\$86,443	10.6	51,548
Install VFDs on Constant Volume (CV) Fans	7,773	2.8	0.0	\$1,277	\$17,660	\$1,400	\$16,260	12.7	7,827
Install VFDs on Chilled Water Pumps	18,585	8.3	0.0	\$3,053	\$15,583	\$0	\$15,583	5.1	18,715
Install VFDs on Heating Water Pumps	8,225	1.4	0.0	\$1,300	\$7,214	\$0	\$7,214	5.6	8,283
Install VFDs on Cooling Tower Fans	23,200	-2.0	0.0	\$3,687	\$28,413	\$3,900	\$24,513	6.6	23,362
Electric Unitary HVAC Measures	13,655	17.3	0.0	\$2,180	\$221,007	\$6,583	\$214,424	98.3	13,751
Install High Efficiency Air Conditioning Units	13,655	17.3	0.0	\$2,180	\$221,007	\$6,583	\$214,424	98.3	13,751
Gas Heating (HVAC/Process) Replacement	0	0.0	57.2	\$656	\$82,597	\$8,410	\$74,187	113.1	6,698
Install High Efficiency Hot Water Boilers	0	0.0	38.6	\$444	\$61,209	\$5,610	\$55,599	125.2	4,516
Install High Efficiency Furnaces	0	0.0	18.6	\$212	\$21,389	\$2,800	\$18,589	87.7	2,182
Domestic Water Heating Upgrade	0	0.0	174.3	\$2,049	\$645	\$0	\$645	0.3	20,411
Install Low-Flow DHW Devices	0	0.0	174.3	\$2,049	\$645	\$0	\$645	0.3	20,411
Food Service Equipment & Refrigeration Measures	16,709	3.5	16.4	\$2,898	\$68,307	\$5,700	\$62,607	21.6	18,750
Food Service Equipment Replacement	4,950	2.5	16.4	\$1,003	\$48,377	\$4,975	\$43,402	43.3	6,909
Refrigerator/Freezer Case Electrically Commutated Motors	1,922	0.2	0.0	\$310	\$3,033	\$0	\$3,033	9.8	1,935
Refrigeration Controls	2,860	0.0	0.0	\$452	\$1,674	\$75	\$1,599	3.5	2,880
Replace Refrigeration Equipment	6,978	0.8	0.0	\$1,133	\$15,223	\$650	\$14,573	12.9	7,027
Plug Load Equipment Control - Vending Machine	5,863	0.7	0.0	\$940	\$1,380	\$0	\$1,380	1.5	5,904
Vending Machine Control	5,863	0.7	0.0	\$940	\$1,380	\$0	\$1,380	1.5	5,904
TOTALS	611,418	199.3	162.8	\$100,058	\$1,011,008	\$101,266	\$909,742	9.1	634,751

* - 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*



* Opportunities considered cost effective have a payback period less than 2/3rds of the useful life of the measure

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		350,132	101.7	-62.5	\$55,532	\$248,764	\$42,293	\$206,471	3.7	345,258
ECM 1	Install LED Fixtures	56,817	8.4	-1.8	\$9,191	\$87,663	\$6,345	\$81,318	8.8	56,999
ECM 2	Retrofit Fixtures with LED Lamps	293,315	93.3	-60.7	\$46,341	\$161,101	\$35,948	\$125,153	2.7	288,259
Lighting Control Measures		95,130	30.0	-19.9	\$15,044	\$121,622	\$21,605	\$100,017	6.6	93,466
ECM 3	Install Occupancy Sensor Lighting Controls	82,059	26.0	-17.2	\$12,971	\$109,422	\$13,070	\$96,352	7.4	80,624
ECM 4	Install High/Low Lighting Controls	13,071	4.1	-2.7	\$2,072	\$12,200	\$8,535	\$3,665	1.8	12,842
Variable Frequency Drive (VFD) Measures		107,641	40.3	0.0	\$17,239	\$159,656	\$12,275	\$147,381	8.5	108,394
ECM 5	Install VFD on Variable Air Volume (VAV) Fans	49,858	29.7	0.0	\$7,922	\$90,786	\$6,975	\$83,811	10.6	50,207
ECM 6	Install VFDs on Constant Volume (CV) Fans	7,773	2.8	0.0	\$1,277	\$17,660	\$1,400	\$16,260	12.7	7,827
ECM 7	Install VFDs on Chilled Water Pumps	18,585	8.3	0.0	\$3,053	\$15,583	\$0	\$15,583	5.1	18,715
ECM 8	Install VFDs on Heating Water Pumps	8,225	1.4	0.0	\$1,300	\$7,214	\$0	\$7,214	5.6	8,283
ECM 9	Install VFDs on Cooling Tower Fans	23,200	-2.0	0.0	\$3,687	\$28,413	\$3,900	\$24,513	6.6	23,362
ECM 10	Install Low-Flow DHW Devices	0	0.0	174.3	\$2,049	\$645	\$0	\$645	0.3	20,411
ECM 11	Refrigerator/Freezer Case Electrically Commutated Motors	1,332	0.2	0.0	\$216	\$1,213	\$0	\$1,213	5.6	1,341
ECM 12	Refrigeration Controls	2,860	0.0	0.0	\$452	\$1,674	\$75	\$1,599	3.5	2,880
Plug Load Equipment Control - Vending Machine		5,863	0.7	0.0	\$940	\$1,380	\$0	\$1,380	1.5	5,904
ECM 13	Vending Machine Control	5,863	0.7	0.0	\$940	\$1,380	\$0	\$1,380	1.5	5,904
TOTALS		562,958	172.9	91.9	\$91,472	\$534,955	\$76,248	\$458,707	5.0	577,654

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

Walter Hill School



#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Lifetime Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		77,403	24.1	-15	\$11,999	\$179,978	\$39,353	\$8,875	\$30,478	2.5	76,220
ECM 1	Install LED Fixtures	5,243	0.6	0	\$825	\$12,372	\$1,788	\$45	\$1,743	2.1	5,280
ECM 2	Retrofit Fixtures with LED Lamps	72,160	23.5	-15	\$11,174	\$167,606	\$37,564	\$8,830	\$28,734	2.6	70,940
Lighting Control Measures		23,247	7.7	-5	\$3,598	\$28,786	\$24,420	\$2,660	\$21,760	6.0	22,840
ECM 3	Install Occupancy Sensor Lighting Controls	21,560	7.1	-5	\$3,337	\$26,698	\$23,420	\$2,660	\$20,760	6.2	21,183
ECM 4	Install High/Low Lighting Controls	1,686	0.6	0	\$261	\$2,088	\$1,000	\$0	\$1,000	3.8	1,657
Motor Upgrades		990	0.5	0	\$156	\$2,335	\$14,205	\$0	\$14,205	91.2	996
	Premium Efficiency Motors	990	0.5	0	\$156	\$2,335	\$14,205	\$0	\$14,205	91.2	996
Variable Frequency Drive (VFD) Measures		20,807	10.4	0	\$3,273	\$49,100	\$45,145	\$2,325	\$42,820	13.1	20,952
ECM 5	Install VFD on Variable Air Volume (VAV) Fans	16,457	10.8	0	\$2,589	\$38,835	\$37,932	\$2,325	\$35,607	13.8	16,572
ECM 6	Install VFDs on Cooling Tower Fans	4,350	-0.4	0	\$684	\$10,265	\$7,214	\$0	\$7,214	10.5	4,380
Domestic Water Heating Upgrade		0	0.0	75	\$908	\$9,078	\$172	\$0	\$172	0.2	8,764
ECM 7	Install Low-Flow DHW Devices	0	0.0	75	\$908	\$9,078	\$172	\$0	\$172	0.2	8,764
Food Service & Refrigeration Measures		2,369	0.3	0	\$373	\$2,515	\$1,067	\$0	\$1,067	2.9	2,385
ECM 8	Refrigerator/Freezer Case Electrically Commutated Motors	414	0.1	0	\$65	\$978	\$607	\$0	\$607	9.3	417
ECM 9	Vending Machine Control	1,954	0.2	0	\$307	\$1,537	\$460	\$0	\$460	1.5	1,968
TOTALS		124,815	43.0	55	\$20,306	\$271,792	\$124,362	\$13,860	\$110,502	5.4	132,158

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

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

Margaret C. Clifford School



#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Lifetime Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		68,192	17.6	-11	\$10,647	\$159,705	\$47,061	\$8,800	\$38,261	3.6	67,359
ECM 1	Install LED Fixtures	13,666	1.6	0	\$2,159	\$32,392	\$20,285	\$2,100	\$18,185	8.4	13,761
ECM 2	Retrofit Fixtures with LED Lamps	54,526	16.0	-11	\$8,488	\$127,313	\$26,775	\$6,700	\$20,075	2.4	53,598
Lighting Control Measures		14,269	4.2	-3	\$2,220	\$17,763	\$19,456	\$2,345	\$17,111	7.7	14,019
ECM 3	Install Occupancy Sensor Lighting Controls	12,169	3.6	-3	\$1,894	\$15,150	\$19,056	\$2,345	\$16,711	8.8	11,957
ECM 4	Install High/Low Lighting Controls	2,099	0.6	0	\$327	\$2,614	\$400	\$0	\$400	1.2	2,063
Motor Upgrades		2,892	1.2	0	\$457	\$6,855	\$14,171	\$0	\$14,171	31.0	2,912
	Premium Efficiency Motors	2,892	1.2	0	\$457	\$6,855	\$14,171	\$0	\$14,171	31.0	2,912
Variable Frequency Drive (VFD) Measures		13,907	1.5	0	\$2,198	\$32,963	\$15,041	\$900	\$14,141	6.4	14,004
	Install VFD on Variable Air Volume (VAV) Fans	1,332	0.4	0	\$210	\$3,156	\$2,632	\$0	\$2,632	12.5	1,341
ECM 5	Install VFDs on Heating Water Pumps	8,225	1.4	0	\$1,300	\$19,496	\$7,214	\$0	\$7,214	5.6	8,283
ECM 6	Install VFDs on Cooling Tower Fans	4,350	-0.4	0	\$687	\$10,311	\$5,194	\$900	\$4,294	6.2	4,380
Gas Heating (HVAC/Process) Replacement		0	0.0	39	\$444	\$8,879	\$61,209	\$5,610	\$55,599	125.2	4,516
	Install High Efficiency Hot Water Boilers	0	0.0	39	\$444	\$8,879	\$61,209	\$5,610	\$55,599	125.2	4,516
Domestic Water Heating Upgrade		0	0.0	18	\$206	\$2,056	\$115	\$0	\$115	0.6	2,091
ECM 7	Install Low-Flow DHW Devices	0	0.0	18	\$206	\$2,056	\$115	\$0	\$115	0.6	2,091
Food Service & Refrigeration Measures		4,285	0.2	0	\$677	\$9,648	\$4,623	\$200	\$4,423	6.5	4,315
	Refrigerator/Freezer Case Electrically Commutated Motors	197	0.0	0	\$31	\$466	\$607	\$0	\$607	19.5	198
ECM 8	Refrigeration Controls	2,860	0.0	0	\$452	\$7,230	\$1,674	\$75	\$1,599	3.5	2,880
	Replace Refrigeration Equipment	887	0.1	0	\$140	\$1,681	\$2,112	\$125	\$1,987	14.2	893
ECM 9	Vending Machine Control	343	0.0	0	\$54	\$271	\$230	\$0	\$230	4.2	345
TOTALS		103,545	24.7	42	\$16,849	\$237,869	\$161,674	\$17,855	\$143,819	8.5	109,217

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

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Governor Charles C. Stratton School



#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Lifetime Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		77,567	20.3	-16	\$12,201	\$183,012	\$80,302	\$10,808	\$69,494	5.7	76,211
	Install LED Fixtures	13,269	2.0	-3	\$2,087	\$31,306	\$42,502	\$4,400	\$38,102	18.3	13,037
ECM 1	Retrofit Fixtures with LED Lamps	64,299	18.3	-13	\$10,114	\$151,706	\$37,799	\$6,408	\$31,391	3.1	63,174
Lighting Control Measures		22,169	6.3	-5	\$3,487	\$27,896	\$29,286	\$2,695	\$26,591	7.6	21,781
ECM 2	Install Occupancy Sensor Lighting Controls	18,135	5.2	-4	\$2,852	\$22,820	\$27,286	\$2,695	\$24,591	8.6	17,818
ECM 3	Install High/Low Lighting Controls	4,034	1.1	-1	\$635	\$5,076	\$2,000	\$0	\$2,000	3.2	3,964
Motor Upgrades		3,408	1.4	0	\$544	\$8,162	\$21,755	\$0	\$21,755	40.0	3,432
	Premium Efficiency Motors	3,408	1.4	0	\$544	\$8,162	\$21,755	\$0	\$21,755	40.0	3,432
Variable Frequency Drive (VFD) Measures		47,901	17.7	0	\$7,648	\$114,727	\$68,860	\$7,650	\$61,210	8.0	48,236
ECM 4	Install VFD on Variable Air Volume (VAV) Fans	33,401	18.9	0	\$5,333	\$79,999	\$52,854	\$4,650	\$48,204	9.0	33,635
ECM 5	Install VFDs on Cooling Tower Fans	14,500	-1.3	0	\$2,315	\$34,729	\$16,005	\$3,000	\$13,005	5.6	14,601
Electric Unitary HVAC Measures		13,655	17.3	0	\$2,180	\$32,706	\$221,007	\$6,583	\$214,424	98.3	13,751
	Install High Efficiency Air Conditioning Units	13,655	17.3	0	\$2,180	\$32,706	\$221,007	\$6,583	\$214,424	98.3	13,751
Gas Heating (HVAC/Process) Replacement		0	0.0	19	\$212	\$4,239	\$21,389	\$2,800	\$18,589	87.7	2,182
	Install High Efficiency Furnaces	0	0.0	19	\$212	\$4,239	\$21,389	\$2,800	\$18,589	87.7	2,182
Domestic Water Heating Upgrade		0	0.0	42	\$475	\$4,750	\$158	\$0	\$158	0.3	4,889
ECM 6	Install Low-Flow DHW Devices	0	0.0	42	\$475	\$4,750	\$158	\$0	\$158	0.3	4,889
Food Service & Refrigeration Measures		3,743	0.4	0	\$598	\$5,558	\$4,785	\$75	\$4,710	7.9	3,769
	Refrigerator/Freezer Case Electrically Commutated Motors	393	0.0	0	\$63	\$942	\$1,213	\$0	\$1,213	19.3	396
	Replace Refrigeration Equipment	1,738	0.2	0	\$277	\$3,329	\$3,342	\$75	\$3,267	11.8	1,750
ECM 7	Vending Machine Control	1,612	0.2	0	\$257	\$1,287	\$230	\$0	\$230	0.9	1,623
TOTALS		168,444	63.5	40	\$27,345	\$381,051	\$447,541	\$30,611	\$416,930	15.2	174,250

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

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General Charles G. Harker School



#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Savings (\$)	Lifetime Energy Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		140,239	41.7	-23	\$22,773	\$341,594	\$124,552	\$18,210	\$106,342	4.7	138,506
ECM 1	Install LED Fixtures	37,909	6.2	-2	\$6,207	\$93,105	\$65,589	\$4,200	\$61,389	9.9	37,959
ECM 2	Retrofit Fixtures with LED Lamps	102,330	35.5	-21	\$16,566	\$248,488	\$58,962	\$14,010	\$44,952	2.7	100,547
Lighting Control Measures		35,446	11.8	-7	\$5,738	\$45,904	\$48,460	\$13,905	\$34,555	6.0	34,826
ECM 3	Install Occupancy Sensor Lighting Controls	30,195	10.1	-6	\$4,888	\$39,103	\$39,660	\$5,370	\$34,290	7.0	29,666
ECM 4	Install High/Low Lighting Controls	5,251	1.7	-1	\$850	\$6,800	\$8,800	\$8,535	\$265	0.3	5,159
Motor Upgrades		397	0.2	0	\$65	\$979	\$11,762	\$0	\$11,762	180.2	400
	Premium Efficiency Motors	397	0.2	0	\$65	\$979	\$11,762	\$0	\$11,762	180.2	400
Variable Frequency Drive (VFD) Measures		26,358	11.1	0	\$4,331	\$64,958	\$33,243	\$1,400	\$31,843	7.4	26,542
ECM 5	Install VFDs on Constant Volume (CV) Fans	7,773	2.8	0	\$1,277	\$19,155	\$17,660	\$1,400	\$16,260	12.7	7,827
ECM 6	Install VFDs on Chilled Water Pumps	18,585	8.3	0	\$3,053	\$45,802	\$15,583	\$0	\$15,583	5.1	18,715
Domestic Water Heating Upgrade		0	0.0	40	\$460	\$4,604	\$201	\$0	\$201	0.4	4,667
ECM 7	Install Low-Flow DHW Devices	0	0.0	40	\$460	\$4,604	\$201	\$0	\$201	0.4	4,667
Food Service & Refrigeration Measures		12,175	3.3	16	\$2,190	\$24,487	\$59,213	\$5,425	\$53,788	24.6	14,185
	Food Service Equipment Replacement	4,950	2.5	16	\$1,003	\$12,036	\$48,377	\$4,975	\$43,402	43.3	6,909
ECM 8	Refrigerator/Freezer Case Electrically Commutated Motors	917	0.1	0	\$151	\$2,261	\$607	\$0	\$607	4.0	924
	Replace Refrigeration Equipment	4,354	0.5	0	\$715	\$8,584	\$9,769	\$450	\$9,319	13.0	4,384
ECM 9	Vending Machine Control	1,954	0.2	0	\$321	\$1,605	\$460	\$0	\$460	1.4	1,968
TOTALS		214,615	68.2	26	\$35,557	\$482,525	\$277,431	\$38,940	\$238,491	6.7	219,125

* - 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).

Solar Energy Generation Potential



Swedesboro-Woolwich School District	High
Walter Hill School	X
Margaret C. Clifford School	X
Governor Charles C. Stratton School	X
General Charles G. Harker School	X

For more information on the SREC Registration Program (SRP) please visit:

<http://www.njcleanenergy.com/renewable-energy/programs/solar-renewable-energy-certificates-srec/new-jersey-solar-renewable-energy>

Energy Efficient Best Practices



- Close Doors and Windows
- Perform Routine Motor Maintenance
- 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

Clean Energy Program Portfolio



ELIGIBLE SECTORS

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

INCENTIVE PROGRAMS

Equipment Rebates:

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

Whole Buildings:

- Pay for Performance

Energy Generation:

- Combined Heat and Power (CHP)

OTHER PROGRAMS

Renewable Energy Generation:

- SREC Registration Program (SRP)

* eligible programs are highlighted in yellow

Recommended NJCEP Incentives per Building



Swedesboro-Woolwich School District	Pay For Performance	Direct Install	SmartStart	CTEEP
Walter Hill School	X	X	X	X
Margaret C. Clifford School	X	X	X	X
Governor Charles C. Stratton School	X		X	X
General Charles G. Harker School	X		X	X

Pay for Performance: Overview



- Comprehensive, whole-building approach to saving energy in existing or new facilities
- Qualification based on energy consumption, energy savings and measure types
- Customer chooses from network of pre-approved ***Participating Partners***
- Incentives paid in three installments at milestones
 - Incentives up to \$2MM per project (\$4MM entity cap/year)
 - \$1 million for electric measures
 - \$1 million for gas measures
 - Incentives up to 50% of total project cost

www.NJCleanEnergy/P4P

Pay for Performance: Process



Submittal and Approval of Application

Development and Approval of Energy Reduction Plan (ERP)

Installation of Recommended Measures

Submittal and Approval of As-Built ERP and Cx Report

Post Construction Verification of Savings

Incentive #1
fixed between \$3,750-\$25,000

Incentive #2
up to 25% project cost

Incentive #3
up to 25% project cost

1 year

Pay for Performance: Details



Incentive #1: Energy Reduction Plan			
Incentive Amount:		\$0.15	per sq ft
Minimum Incentive:		\$3,750	
Maximum Incentive:		\$25,000	or 50% of facility annual energy cost
Incentive #2: Installation of Recommended Measures			
Minimum Performance Target:		15%	
Electric Incentives	Base Incentive based on 15% savings:	\$0.09	per projected kWh saved
	For each % over 15% add:	\$0.005	
	Maximum Incentive:	\$0.11	
Gas Incentives	Base Incentive based on 15 % savings:	\$0.90	per projected Therm saved
	For each % over 15% add:	\$0.05	
	Maximum Incentive:	\$1.25	
Incentive Cap:		25%	of total project cost
Incentive #3: Post-Construction Benchmarking Report			
Minimum Performance Target:		15%	
Electric Incentives	Base Incentive based on 15% savings:	\$0.09	per projected kWh saved
	For each % over 15% add:	\$0.005	
	Maximum Incentive:	\$0.11	
Gas Incentives	Base Incentive based on 15% savings:	\$0.90	per projected Therm saved
	For each % over 15% add:	\$0.05	
	Maximum Incentive:	\$1.25	
Incentive Cap:		25%	of total project cost

Direct Install: Overview



- Turn-key retrofit program to replace outdated and inefficient equipment, including lighting, HVAC, refrigeration, etc.
- Open to Small to Mid-Sized Commercial and Industrial facilities with an average electric demand ≤ 200 kW
- Provides incentives of up to 70% of the installed cost
- Incentives are paid directly to the contractor
 - Customer only pays remaining 30% of installed cost
 - \$125,000 project/building cap
 - \$250,000 per entity cap (up to \$500,000 if using ESIP)
- Participating contractors provide support and process all paperwork
- Fast turnaround time: Average length of time for job completion (4-6 months)

Direct Install:



Participating Contractor

Tri-State Light & Energy, Inc.

Alan Rhode

610-789-1900 x226

asr@tsle.com

SmartStart: Overview



- Two types of incentives for high efficiency equipment installation:
 - Prescriptive
 - Custom
- Project Categories:
 - New Construction
 - Renovation
 - Remodeling
 - Equipment Replacement
- Project pre-approval required for lighting and custom measures
- Incentives up to \$500,000 per electric account & \$500,000 per natural gas account
- Specific incentives and individual applications for Lighting, HVAC, VFDs, Refrigeration, Controls and more!

www.NJCleanEnergy/SSB

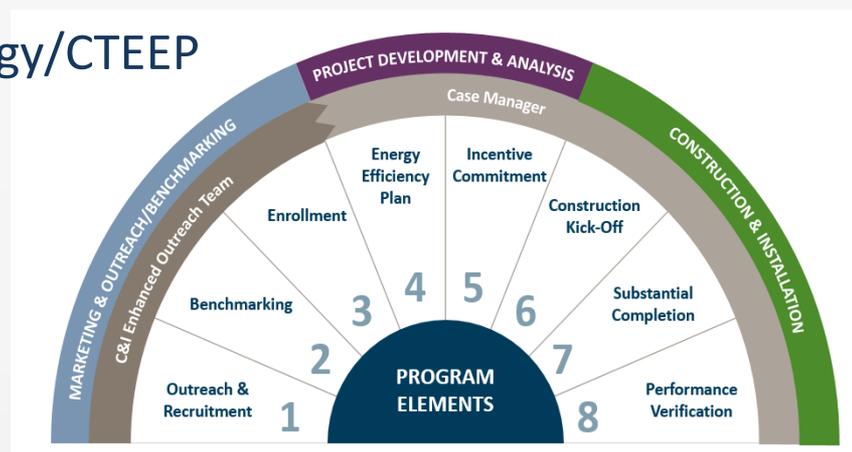
CTEEP: Overview



Customer Tailored Energy Efficiency Pilot (CTEEP)

- Provide customers with **on-site assistance** to discuss project opportunities and program incentives.
- A **single application** submission streamlines multiple prescriptive and custom measures.
- Provide **technical assistance incentives** to help offset soft costs associated with developing and planning an energy efficiency project.
- Incentives up to \$250,000 entity cap.

www.NJCleanEnergy/CTEEP



Recommended NJCEP Incentives per Building



Swedesboro-Woolwich School District	Pay For Performance	Direct Install	SmartStart	CTEEP
Walter Hill School	X	X	X	X
Margaret C. Clifford School	X	X	X	X
Governor Charles C. Stratton School	X		X	X
General Charles G. Harker School	X		X	X

Financing Option:



SmartStart, CTEEP & P4P:

- 0% Financing
- Up to \$130,000 for 10 years
- SJG can help guide you through the process

Contact:

Bruce Grossman – Program Manager

South Jersey Gas

#1 South Jersey Plaza

Folsom, NJ 08037

Phone: 609-561-9000, ext. 4271



Financing Option: Direct Install



The State of NJ pays:

- 70% of all qualified upgrades
- Up to \$125,000

South Jersey Gas will finance:

- Remaining 30%
- 0% financing
- For 3 years
- Up to \$53,571



Energy Savings Improvement Program (ESIP)

- Provides alternative financing for energy savings projects at public institutions. Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract. Does not count as debt/require voter approval.
- Requires an audit as 1st step (LGEA satisfies requirement)
- ESIP participation question on LGEA application
- Program administered directly by BPU

ESIP Process

New Jersey's Clean Energy Program Interaction

Initial Energy Audit completed
for entity building(s)

Local Government Energy Audit
(LGEA) may be used to meet
this requirement

Entity issues ESIP RFP (previously
approved by BPU) and selects ESCO
or DIY approach

Investment Grade Energy Audit completed
and Energy Savings Plan (ESP)
developed

P4P Energy Reduction Plan (ERP),
Direct Install, or SmartStart application
recommended submittal time frame

Third party review of ESP

Review and approval of ESP
by Board of Public Utilities (BPU)

Entity adopts ESP,
determines guarantee



FOR MORE INFORMATION

ESIP

Mike Thulen

ESIP Coordinator

Office: 609-777-3338

Cell: 732-330-2419

ESIP@bpu.nj.gov

Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

Gary Finger

Regional Outreach Manager

856.780.8553

gfinger@trcsolutions.com