

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Ridgefield Public Schools

July 17, 2019

INTRODUCTIONS

Ridgefield Public Schools

- Julyana Ortiz – Business Administrator
- James Malaquias – Building & Grounds Supervisor

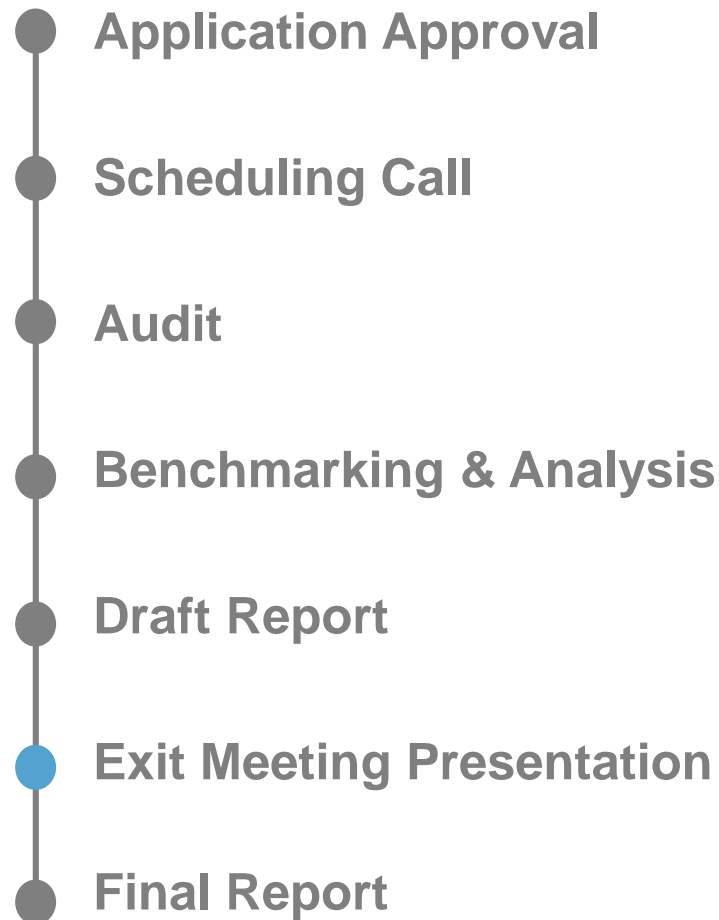
- *NJ Clean Energy Program*

- Aimee Lalonde – TRC Program Manager
- Sarah Walters – TRC Account Manager
- Mike Mandzik – TRC Outreach Manager
- Arif Welcher – BPU Government/Business Manager

AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified
- Questions regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Ridgefield Public Schools

LGEA PROCESS



SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

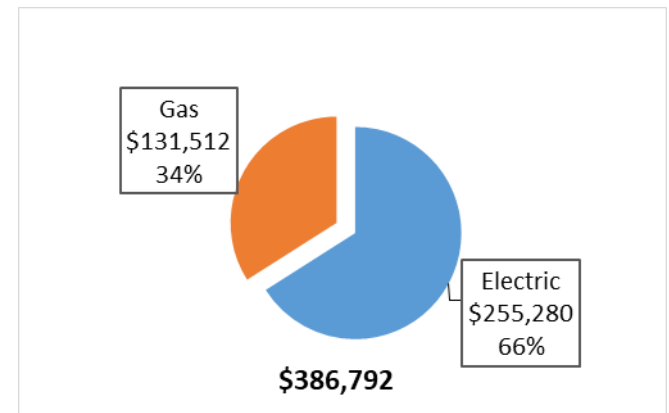
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

- Shaler Academy
- Bergen Boulevard School
- Slocum Skews School
- Ridgefield Memorial High School
- Central Office



BENCHMARKING

Bergen Boulevard School

ENERGY STAR® Statement of Energy Performance

71
ENERGY STAR® Score

Bergen Boulevard School
Primary Property Type: K-12 School
Gross Floor Area (ft²): 29,954
Built: 1923
For Year Ending: July 31, 2018
Date Generated: May 20, 2019

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: Bergen Boulevard School 635 Bergen Boulevard Ridgefield, New Jersey 07657	Property Owner: Ridgefield Board of Education 555 Chestnut Street Bergen, NJ 7657	Primary Contact: Juliana Ortiz 555 Chestnut Street Bergen, NJ 7657 201-945-7747 jortiz@ridgefieldschools.com
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Property ID: 5787869

Energy Consumption and Energy Use Intensity (EUI)

Site EUI 77.2 kBtu/ft²	Annual Energy by Fuel: Electric - Grid (kBtu) 550,948 (24%) Natural Gas (kBtu) 1,760,655 (76%)	National Median Comparison: National Median Site EUI (kBtu/ft²) 95.9 National Median Source EUI (kBtu/ft²) 140.7 % Diff from National Median Source EUI -20% Annual Emissions: Greenhouse Gas Emissions (Metric Tons CO2e/year) 149
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Source EUI
113.2 kBtu/ft²

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)

Site EUI
77.2 kBtu/ft²

Building Name	ENERGY STAR® Score
Shaler Academy	78
Bergen Boulevard School	71
Slocum Skews School	60
Ridgefield Memorial High School	61
Central Office	3

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	375,895	106.2	-74.2	\$54,184.52	\$225,131.99	\$41,456.00	\$183,675.99	3.4	369,831
Install LED Fixtures	50,751	14.7	-8.3	\$7,292.99	\$82,265.29	\$13,750.00	\$68,515.29	9.4	50,129
Retrofit Fluorescent Fixtures with LED Lamps and Drivers	119,986	38.3	-25.1	\$18,267.03	\$64,967.38	\$9,420.00	\$55,547.38	3.0	117,887
Retrofit Fixtures with LED Lamps	179,874	51.3	-35.5	\$25,016.30	\$71,961.25	\$18,286.00	\$53,675.25	2.1	176,972
Install LED Exit Signs	25,285	1.9	-5.3	\$3,608.20	\$5,938.07	\$0.00	\$5,938.07	1.6	24,843
Lighting Control Measures	70,953	21.6	-14.6	\$10,663.43	\$68,993.00	\$7,650.00	\$61,343.00	5.8	69,737
Install Occupancy Sensor Lighting Controls	62,507	19.2	-13.1	\$9,402.22	\$58,836.00	\$7,560.00	\$51,276.00	5.5	61,414
Install Daylight Dimming Controls	45	0.0	0.0	\$9.59	\$250.00	\$90.00	\$160.00	16.7	46
Install High/Low Lighting Controls	8,401	2.4	-1.6	\$1,251.62	\$9,907.00	\$0.00	\$9,907.00	7.9	8,277
Variable Frequency Drive (VFD) Measures	110,847	20.4	364.0	\$20,158.78	\$102,892.06	\$3,850.00	\$99,042.06	4.9	154,241
Install VFDs on Constant Volume (CV) Fans	43,996	12.5	0.0	\$6,724.58	\$28,050.59	\$3,400.00	\$24,650.59	3.7	44,304
Install VFDs on Chilled Water Pumps	18,688	3.3	0.0	\$2,637.26	\$12,782.20	\$0.00	\$12,782.20	4.8	18,818
Install VFDs on Heating Water Pumps	39,551	4.5	0.0	\$6,286.33	\$55,668.99	\$0.00	\$55,668.99	8.9	39,827
Install VFDs on Cooling Tower Fans	401	0.0	0.0	\$55.84	\$3,010.13	\$0.00	\$3,010.13	53.9	404
Install VFDs on Kitchen Hood Fan Motors	8,211	0.0	364.0	\$4,454.77	\$3,380.15	\$450.00	\$2,930.15	0.7	50,888
Electric Unitary HVAC Measures	69,327	27.8	0.0	\$9,739.49	\$221,787.95	\$10,644.00	\$211,143.95	21.7	69,811
Install High Efficiency Air Conditioning Units	24,343	22.2	0.0	\$3,528.78	\$180,946.67	\$8,988.00	\$171,958.67	48.7	24,513
Install High Efficiency Heat Pumps	44,984	5.6	0.0	\$6,210.71	\$40,841.28	\$1,656.00	\$39,185.28	6.3	45,298
Electric Chiller Replacement	6,360	3.6	0.0	\$885.36	\$10,100.87	\$400.00	\$9,700.87	11.0	6,404
Install High Efficiency Chillers	6,360	3.6	0.0	\$885.36	\$10,100.87	\$400.00	\$9,700.87	11.0	6,404
Gas Heating (HVAC/Process) Replacement	0	0.0	29.5	\$295.72	\$9,035.98	\$400.00	\$8,635.98	29.2	3,457
Install High Efficiency Hot Water Boilers	0	0.0	29.5	\$295.72	\$9,035.98	\$400.00	\$8,635.98	29.2	3,457
Domestic Water Heating Upgrade	0	0.0	156.1	\$1,452.41	\$41,505.66	\$1,443.75	\$40,061.91	27.6	18,273
Install High Efficiency Gas-Fired Water Heater	0	0.0	90.6	\$834.34	\$41,340.75	\$1,443.75	\$39,897.00	47.8	10,607
Install Low-Flow DHW Devices	0	0.0	65.5	\$618.07	\$164.91	\$0.00	\$164.91	0.3	7,666
Food Service Equipment & Refrigeration Measures	1,237	0.1	0.0	\$166.03	\$909.90	\$120.00	\$789.90	4.8	1,245
Refrigerator/Freezer Case Electrically Commutated Motors	1,237	0.1	0.0	\$166.03	\$909.90	\$120.00	\$789.90	4.8	1,245
Plug Load Equipment Control - Vending Machine	3,224	0.4	0.0	\$432.76	\$460.00	\$100.00	\$360.00	0.8	3,246
Vending Machine Control	3,224	0.4	0.0	\$432.76	\$460.00	\$100.00	\$360.00	0.8	3,246
TOTALS	637,842	179.9	460.7	\$97,978.50	\$680,817.41	\$66,063.75	\$614,753.66	6.3	696,245

* - 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

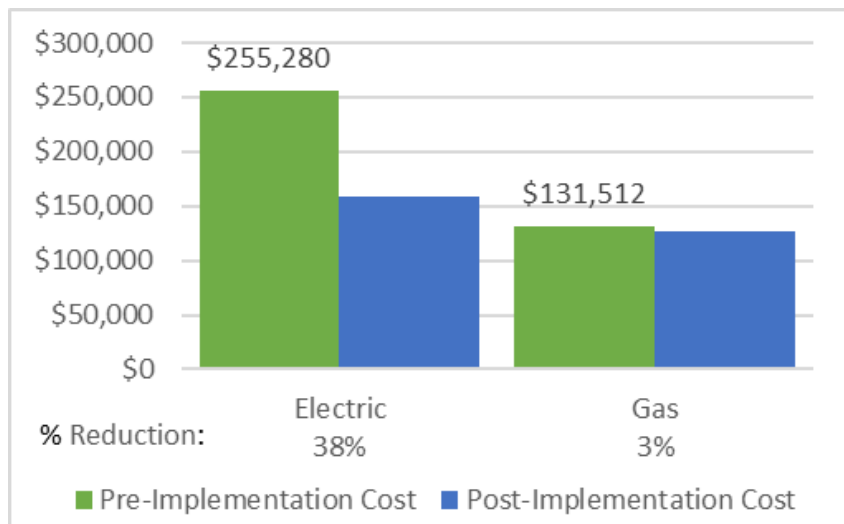
	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		375,895	106.2	-74.2	\$54,184.52	\$225,131.99	\$41,456.00	\$183,675.99	3.4	369,831
ECM 1	Install LED Fixtures	50,751	14.7	-8.3	\$7,292.99	\$82,265.29	\$13,750.00	\$68,515.29	9.4	50,129
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	119,986	38.3	-25.1	\$18,267.03	\$64,967.38	\$9,420.00	\$55,547.38	3.0	117,887
ECM 3	Retrofit Fixtures with LED Lamps	179,874	51.3	-35.5	\$25,016.30	\$71,961.25	\$18,286.00	\$53,675.25	2.1	176,972
ECM 4	Install LED Exit Signs	25,285	1.9	-5.3	\$3,608.20	\$5,938.07	\$0.00	\$5,938.07	1.6	24,843
Lighting Control Measures		70,908	21.5	-14.6	\$10,653.84	\$68,743.00	\$7,560.00	\$61,183.00	5.7	69,691
ECM 5	Install Occupancy Sensor Lighting Controls	62,507	19.2	-13.1	\$9,402.22	\$58,836.00	\$7,560.00	\$51,276.00	5.5	61,414
ECM 6	Install High/Low Lighting Controls	8,401	2.4	-1.6	\$1,251.62	\$9,907.00	\$0.00	\$9,907.00	7.9	8,277
Variable Frequency Drive (VFD) Measures		95,996	18.8	364.0	\$18,155.40	\$77,809.35	\$3,850.00	\$73,959.35	4.1	139,287
ECM 7	Install VFDs on Constant Volume (CV) Fans	43,996	12.5	0.0	\$6,724.58	\$28,050.59	\$3,400.00	\$24,650.59	3.7	44,304
ECM 8	Install VFDs on Chilled Water Pumps	18,688	3.3	0.0	\$2,637.26	\$12,782.20	\$0.00	\$12,782.20	4.8	18,818
ECM 9	Install VFDs on Heating Water Pumps	25,101	2.9	0.0	\$4,338.79	\$33,596.41	\$0.00	\$33,596.41	7.7	25,277
ECM 10	Install VFDs on Kitchen Hood Fan Motors	8,211	0.0	364.0	\$4,454.77	\$3,380.15	\$450.00	\$2,930.15	0.7	50,888
Electric Unitary HVAC Measures		44,984	5.6	0.0	\$6,210.71	\$40,841.28	\$1,656.00	\$39,185.28	6.3	45,298
ECM 11	Install High Efficiency Heat Pumps	44,984	5.6	0.0	\$6,210.71	\$40,841.28	\$1,656.00	\$39,185.28	6.3	45,298
Electric Chiller Replacement		6,360	3.6	0.0	\$885.36	\$10,100.87	\$400.00	\$9,700.87	11.0	6,404
ECM 12	Install High Efficiency Chillers	6,360	3.6	0.0	\$885.36	\$10,100.87	\$400.00	\$9,700.87	11.0	6,404
Domestic Water Heating Upgrade		0	0.0	65.5	\$618.07	\$164.91	\$0.00	\$164.91	0.3	7,666
ECM 13	Install Low-Flow DHW Devices	0	0.0	65.5	\$618.07	\$164.91	\$0.00	\$164.91	0.3	7,666
Food Service Equipment & Refrigeration Measures		1,237	0.1	0.0	\$166.03	\$909.90	\$120.00	\$789.90	4.8	1,245
ECM 14	Refrigerator/Freezer Case Electrically Commutated Motors	1,237	0.1	0.0	\$166.03	\$909.90	\$120.00	\$789.90	4.8	1,245
Plug Load Equipment Control - Vending Machine		3,224	0.4	0.0	\$432.76	\$460.00	\$100.00	\$360.00	0.8	3,246
ECM 15	Vending Machine Control	3,224	0.4	0.0	\$432.76	\$460.00	\$100.00	\$360.00	0.8	3,246
TOTALS		598,603	156.2	340.6	\$91,306.69	\$424,161.30	\$55,142.00	\$369,019.30	4.0	642,669

* - 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.

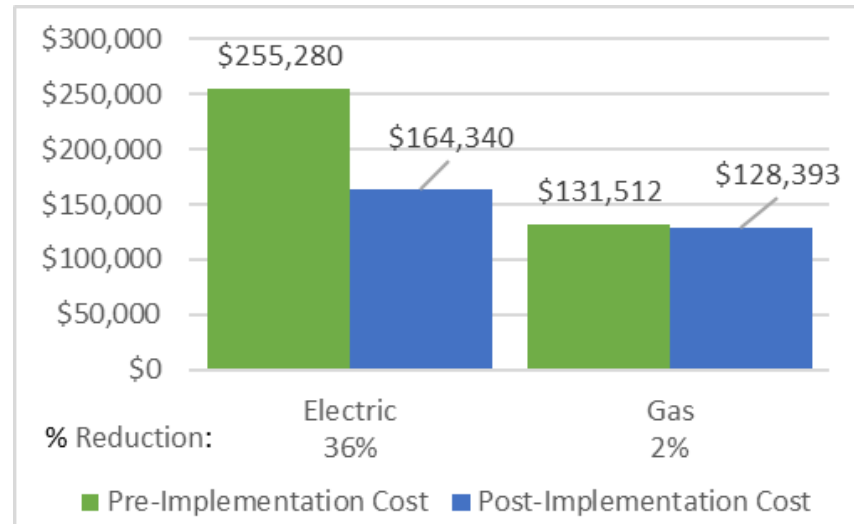
** - Simple Payback Period is based on net measure costs (i.e. after incentives).

TOTAL SAVINGS POTENTIAL

All Opportunities



Cost Effective Opportunities



SHALER ACADEMY

#	Energy Conservation Measure	Recommend?	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			61,758	18.8	-12	\$8,615	\$52,949	\$10,790	\$42,159	4.9	60,803
ECM 1	Install LED Fixtures	Yes	20,996	6.8	-4	\$2,929	\$31,760	\$5,800	\$25,960	8.9	20,667
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	2,142	0.7	0	\$298	\$2,723	\$260	\$2,463	8.3	2,104
ECM 3	Retrofit Fixtures with LED Lamps	Yes	34,361	10.9	-6	\$4,795	\$17,525	\$4,730	\$12,795	2.7	33,847
ECM 4	Install LED Exit Signs	Yes	4,259	0.3	-1	\$593	\$941	\$0	\$941	1.6	4,185
Lighting Control Measures			12,247	4.0	-2	\$1,708	\$11,735	\$1,150	\$10,585	6.2	12,056
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	10,437	3.6	-2	\$1,454	\$9,260	\$1,150	\$8,110	5.6	10,254
ECM 6	Install High/Low Lighting Controls	Yes	1,811	0.4	0	\$254	\$2,475	\$0	\$2,475	9.7	1,802
Variable Frequency Drive (VFD) Measures			27,687	4.2	0	\$3,914	\$27,719	\$0	\$27,719	7.1	27,881
ECM 7	Install VFDs on Chilled Water Pumps	Yes	16,585	2.9	0	\$2,345	\$9,521	\$0	\$9,521	4.1	16,701
ECM 8	Install VFDs on Heating Water Pumps	Yes	11,101	1.3	0	\$1,569	\$18,198	\$0	\$18,198	11.6	11,179
Electric Unitary HVAC Measures			31,926	9.9	0	\$4,513	\$63,088	\$3,404	\$59,684	13.2	32,149
ECM 9	Install High Efficiency Air Conditioning Units	No	7,787	7.5	0	\$1,101	\$40,398	\$2,484	\$37,914	34.4	7,841
ECM 10	Install High Efficiency Heat Pumps	Yes	24,139	2.4	0	\$3,412	\$22,690	\$920	\$21,770	6.4	24,308
Domestic Water Heating Upgrade			0	0.0	20	\$194	\$50	\$0	\$50	0.3	2,333
ECM 11	Install Low-Flow DHW Devices	Yes	0	0.0	20	\$194	\$50	\$0	\$50	0.3	2,333
TOTALS (COST EFFECTIVE MEASURES)			125,831	29.3	6	\$17,844	\$115,143	\$12,860	\$102,283	5.7	127,381
TOTALS (ALL MEASURES)			133,618	36.8	6	\$18,945	\$155,541	\$15,344	\$140,197	7.4	135,223

BERGEN BOULEVARD SCHOOL

#	Energy Conservation Measure	Recommend?	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			2,825	0.8	-1	\$591	\$1,877	\$211	\$1,666	2.8	2,776
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,119	0.3	0	\$234	\$924	\$90	\$834	3.6	1,100
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,513	0.5	0	\$316	\$663	\$121	\$542	1.7	1,487
ECM 3	Install LED Exit Signs	Yes	193	0.0	0	\$40	\$290	\$0	\$290	7.2	189
Lighting Control Measures			7,678	2.3	-2	\$1,605	\$10,460	\$1,320	\$9,140	5.7	7,545
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	6,992	2.1	-1	\$1,462	\$9,760	\$1,230	\$8,530	5.8	6,870
ECM 5	Install Daylight Dimming Controls	No	45	0.0	0	\$10	\$250	\$90	\$160	16.7	46
ECM 6	Install High/Low Lighting Controls	Yes	641	0.2	0	\$134	\$450	\$0	\$450	3.4	630
Variable Frequency Drive (VFD) Measures			10,153	1.2	0	\$2,142	\$8,152	\$0	\$8,152	3.8	10,224
ECM 7	Install VFDs on Heating Water Pumps	Yes	10,153	1.2	0	\$2,142	\$8,152	\$0	\$8,152	3.8	10,224
Electric Unitary HVAC Measures			2,629	1.4	0	\$555	\$13,614	\$552	\$13,062	23.5	2,647
ECM 8	Install High Efficiency Air Conditioning Units	No	2,629	1.4	0	\$555	\$13,614	\$552	\$13,062	23.5	2,647
TOTALS (COST EFFECTIVE MEASURES)			20,611	4.4	-2	\$4,329	\$20,239	\$1,441	\$18,798	4.3	20,499
TOTALS (ALL MEASURES)			23,285	5.8	-2	\$4,893	\$34,103	\$2,083	\$32,020	6.5	23,192

SLOCUM SKEWS SCHOOL

#	Energy Conservation Measure	Recommend?	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			130,420	41.2	-26	\$21,022	\$74,802	\$12,891	\$61,911	2.9	128,274
ECM 1	Install LED Fixtures	Yes	14,219	4.8	-3	\$2,291	\$16,273	\$3,150	\$13,123	5.7	13,971
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	79,527	27.1	-17	\$12,813	\$43,977	\$6,560	\$37,417	2.9	78,136
ECM 3	Retrofit Fixtures with LED Lamps	Yes	29,138	8.7	-5	\$4,705	\$12,887	\$3,181	\$9,706	2.1	28,764
ECM 4	Install LED Exit Signs	Yes	7,535	0.6	-2	\$1,214	\$1,666	\$0	\$1,666	1.4	7,404
Lighting Control Measures			20,503	7.0	-4	\$3,303	\$20,278	\$2,240	\$18,038	5.5	20,145
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	17,892	6.1	-4	\$2,883	\$17,128	\$2,240	\$14,888	5.2	17,579
ECM 6	Install High/Low Lighting Controls	Yes	2,611	0.9	-1	\$421	\$3,150	\$0	\$3,150	7.5	2,565
Variable Frequency Drive (VFD) Measures			32,326	8.7	0	\$5,268	\$25,776	\$2,200	\$23,576	4.5	32,552
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	28,479	8.2	0	\$4,641	\$18,529	\$2,200	\$16,329	3.5	28,678
ECM 8	Install VFDs on Heating Water Pumps	Yes	3,847	0.4	0	\$627	\$7,246	\$0	\$7,246	11.6	3,874
TOTALS (COST EFFECTIVE MEASURES)			183,249	56.9	-30	\$29,594	\$120,855	\$17,331	\$103,524	3.5	180,971
TOTALS (ALL MEASURES)			183,249	56.9	-30	\$29,594	\$120,855	\$17,331	\$103,524	3.5	180,971

* - 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).

RIDGEFIELD MEMORIAL HIGH SCHOOL

#	Energy Conservation Measure	Recommend?	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			180,631	45.3	-36	\$23,920	\$95,325	\$17,562	\$77,763	3.3	177,720
ECM 1	Install LED Fixtures	Yes	15,536	3.0	-1	\$2,074	\$34,233	\$4,800	\$29,433	14.2	15,491
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	37,198	10.1	-8	\$4,922	\$17,344	\$2,510	\$14,834	3.0	36,547
ECM 3	Retrofit Fixtures with LED Lamps	Yes	114,793	31.2	-24	\$15,191	\$40,852	\$10,252	\$30,600	2.0	112,806
ECM 4	Install LED Exit Signs	Yes	13,105	1.0	-3	\$1,734	\$2,897	\$0	\$2,897	1.7	12,876
Lighting Control Measures			28,963	7.9	-6	\$3,832	\$25,483	\$2,820	\$22,663	5.9	28,456
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	25,842	7.0	-5	\$3,419	\$21,876	\$2,820	\$19,056	5.6	25,390
ECM 6	Install High/Low Lighting Controls	Yes	3,121	0.9	-1	\$413	\$3,607	\$0	\$3,607	8.7	3,066
Variable Frequency Drive (VFD) Measures			36,599	5.8	364	\$8,266	\$31,964	\$1,650	\$30,314	3.7	79,474
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	15,517	4.3	0	\$2,083	\$9,521	\$1,200	\$8,321	4.0	15,626
ECM 8	Install VFDs on Heating Water Pumps	No	12,870	1.4	0	\$1,728	\$19,062	\$0	\$19,062	11.0	12,960
ECM 9	Install VFDs on Kitchen Hood Fan Motors	Yes	8,211	0.0	364	\$4,455	\$3,380	\$450	\$2,930	0.7	50,888
Electric Unitary HVAC Measures			34,041	16.2	0	\$4,570	\$142,842	\$6,550	\$136,292	29.8	34,279
ECM 10	Install High Efficiency Air Conditioning Units	No	13,197	12.9	0	\$1,772	\$124,691	\$5,814	\$118,877	67.1	13,289
ECM 11	Install High Efficiency Heat Pumps	Yes	20,844	3.2	0	\$2,798	\$18,152	\$736	\$17,416	6.2	20,990
Domestic Water Heating Upgrade			0	0.0	130	\$1,201	\$41,441	\$1,444	\$39,997	33.3	15,273
ECM 12	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	91	\$834	\$41,341	\$1,444	\$39,897	47.8	10,607
ECM 13	Install Low-Flow DHW Devices	Yes	0	0.0	40	\$367	\$100	\$0	\$100	0.3	4,667
Food Service & Refrigeration Measures			4,460	0.5	0	\$599	\$1,370	\$220	\$1,150	1.9	4,492
ECM 14	Refrigerator/Freezer Case Electrically Commutated	Yes	1,237	0.1	0	\$166	\$910	\$120	\$790	4.8	1,245
ECM 15	Vending Machine Control	Yes	3,224	0.4	0	\$433	\$460	\$100	\$360	0.8	3,246
TOTALS (COST EFFECTIVE MEASURES)			258,627	61.2	362	\$38,055	\$153,332	\$22,988	\$130,344	3.4	302,838
TOTALS (ALL MEASURES)			284,694	75.6	453	\$42,388	\$338,426	\$30,246	\$308,180	7.3	339,694

CENTRAL OFFICES

#	Energy Conservation Measure	Recommend?	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			261	0.0	0	\$36	\$179	\$2	\$177	4.9	258
ECM 1	Retrofit Fixtures with LED Lamps	Yes	68	0.0	0	\$10	\$34	\$2	\$32	3.4	69
ECM 2	Install LED Exit Signs	Yes	193	0.0	0	\$26	\$145	\$0	\$145	5.5	189
Lighting Control Measures			1,562	0.4	0	\$214	\$1,037	\$120	\$917	4.3	1,534
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,344	0.3	0	\$184	\$812	\$120	\$692	3.8	1,321
ECM 4	Install High/Low Lighting Controls	Yes	218	0.1	0	\$30	\$225	\$0	\$225	7.5	214
Variable Frequency Drive (VFD) Measures			4,082	0.5	0	\$568	\$9,281	\$0	\$9,281	16.3	4,111
ECM 5	Install VFDs on Chilled Water Pumps	Yes	2,102	0.4	0	\$293	\$3,261	\$0	\$3,261	11.1	2,117
ECM 6	Install VFDs on Heating Water Pumps	No	1,579	0.1	0	\$220	\$3,010	\$0	\$3,010	13.7	1,590
ECM 7	Install VFDs on Cooling Tower Fans	No	401	0.0	0	\$56	\$3,010	\$0	\$3,010	53.9	404
Electric Unitary HVAC Measures			731	0.3	0	\$102	\$2,244	\$138	\$2,106	20.7	736
ECM 8	Install High Efficiency Air Conditioning Units	No	731	0.3	0	\$102	\$2,244	\$138	\$2,106	20.7	736
Electric Chiller Replacement			6,360	3.6	0	\$885	\$10,101	\$400	\$9,701	11.0	6,404
ECM 9	Install High Efficiency Chillers	Yes	6,360	3.6	0	\$885	\$10,101	\$400	\$9,701	11.0	6,404
Gas Heating (HVAC/Process) Replacement			0	0.0	30	\$296	\$9,036	\$400	\$8,636	29.2	3,457
ECM 10	Install High Efficiency Hot Water Boilers	No	0	0.0	30	\$296	\$9,036	\$400	\$8,636	29.2	3,457
Domestic Water Heating Upgrade			0	0.0	6	\$57	\$14	\$0	\$14	0.3	667
ECM 11	Install Low-Flow DHW Devices	Yes	0	0.0	6	\$57	\$14	\$0	\$14	0.3	667
TOTALS (COST EFFECTIVE MEASURES)			10,285	4.4	5	\$1,485	\$14,593	\$522	\$14,071	9.5	10,980
TOTALS (ALL MEASURES)			12,996	4.8	35	\$2,158	\$31,893	\$1,060	\$30,833	14.3	17,167

SOLAR ENERGY GENERATION POTENTIAL

	Shaler Academy	Bergen Blvd. School	Slocum Skews School	Ridgefield Memorial HS
<i>Potential:</i>	HIGH	HIGH	HIGH	HIGH
<i>System Potential: (kW)</i>	105	76	231	236
<i>Electric Generation: (kWh per year)</i>	125,094	90,545	275,206	281,163
<i>Displaced Cost: (per year)</i>	\$17,680	\$19,110	\$44,850	\$37,740

SREC Registration Program (SRP):

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

**Community Solar Energy Pilot
Program:**

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

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

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 (CHP)

OTHER PROGRAMS

Renewable Energy Generation:

- **SREC Registration Program (SRP)**

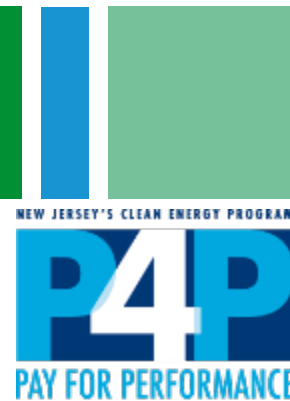
RECOMMENDED NJCEP INCENTIVES PER BUILDING

Ridgefield Public Schools	Pay For Performance	Direct Install	SmartStart	CTEEP
Shaler Academy		X	X	X
Bergen Boulevard School		X	X	X
Slocum Skews School			X	X
Ridgefield Memorial High School	X		X	X
Central Office		X	X	X



PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



What is P4P: Comprehensive, whole-building approach to saving energy in existing or new facilities.

Qualifications: Annual peak demand 200 kW+ in the previous year for existing buildings

About: Customer choose from a network of pre-approved ***Participating Partners***

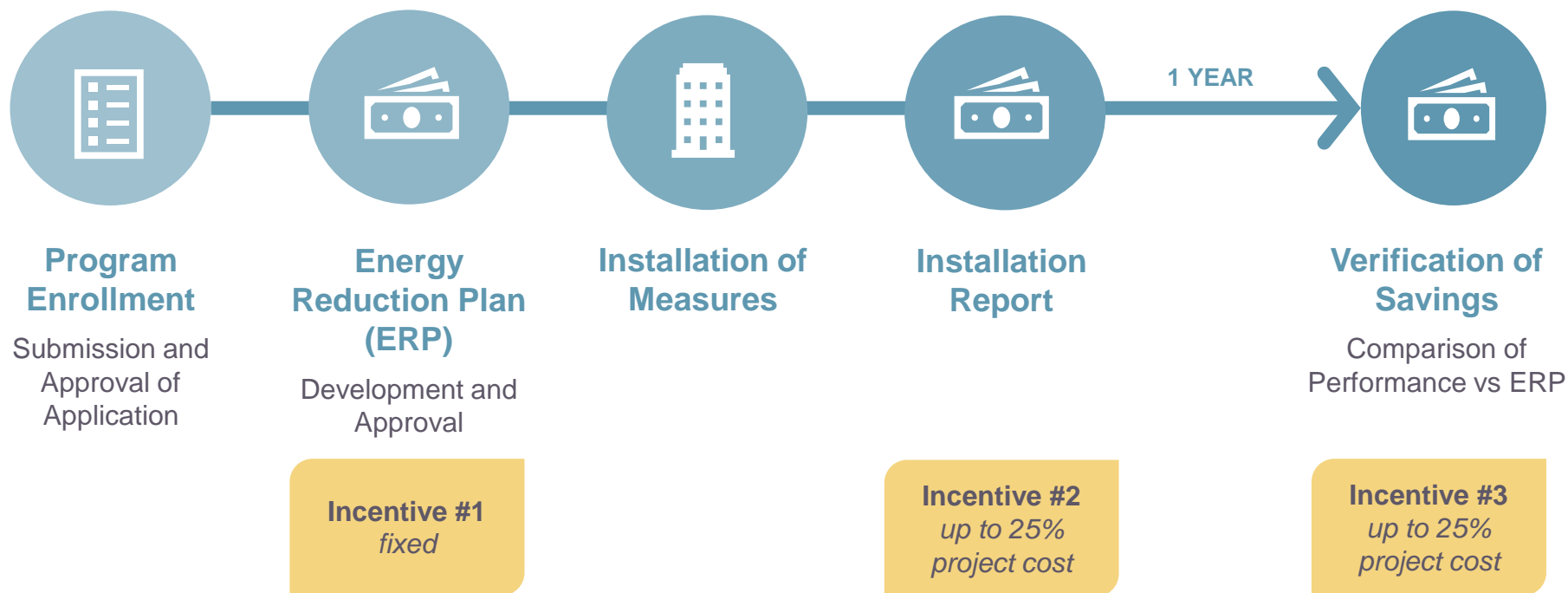
Incentives:

- Incentives paid in three installments
 - Up to \$2MM per project((\$4MM entity cap/year)
 - \$1 million for electric measures
 - \$1 million for gas measures
 - Up to 80% for UEZ/OZ/ MUNI/**K-12** Public Schools) up to \$2MM per project / \$4MM per entity annually
 - Incentive #2 & #3 are double for UEZ/OZ/ MUNI/**K-12 Public Schools**



PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



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/MUNI/**K-12 Public Schools**), or
- \$250,000 entity cap ([\\$4MM](#) UEZ/OZ/MUNI/**K-12**)

DIRECT INSTALL

NJCleanEnergy.com/DI

Facilities in Urban Enterprise Zones (UEZ), Opportunity Zones (OZ), municipalities, 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

Lime Energy

Fran Burke

732-259-4136

fburke@lime-energy.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

- Lighting & Lighting Controls
- Packaged HVAC
- Boilers & Water Heaters
- Chillers
- VFD's
- Food Service
- Refrigeration

Prescriptive Only:

**DOUBLE
INCENTIVES FOR
OZ/UEZ/ MUNI/K-12
PUBLIC SCHOOLS**

Custom Incentives

- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Projects must have a minimum first year energy savings of 75,000 kWh or 1,500 therms
- 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:

- \$250,000 fiscal year entity cap
- Technical assistance incentives for custom project evaluation (up to \$10K)

**SAME INCENTIVE
VALUES AS
SMARTSTART**



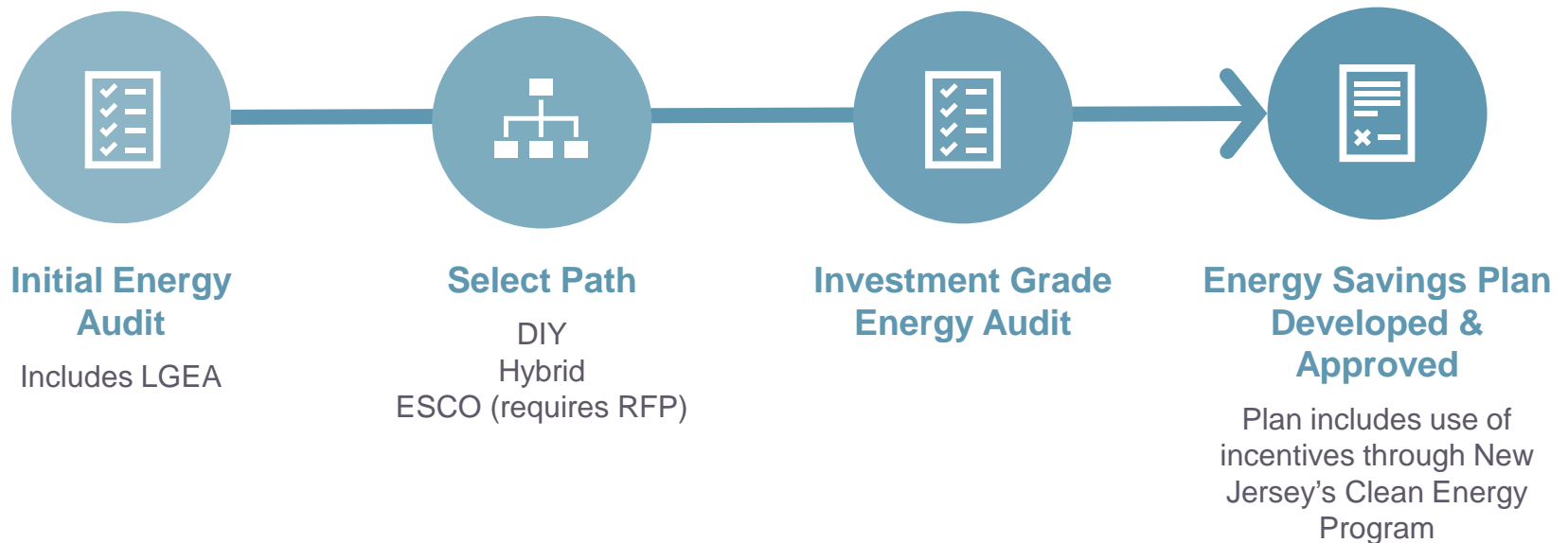
FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the BPU
- Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract
- Requires NO new bonding and is outside of capital budget
- Does not count as debt or require voter approval



FINANCING MECHANISM: ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

FOR MORE INFORMATION

Mike Thulen

ESIP Coordinator

Office: 609-777-3338

Cell: 732-330-2419

ESIP@bpu.nj.gov

FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (732) 855-0033

Mike Mandzik

Regional Outreach Manager

732.570.7534

mmandzik@trccompanies.com

QUESTIONS

