

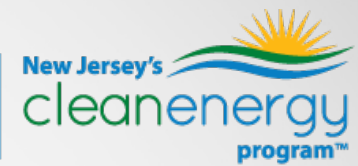
New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Buena Regional School District

TRC Energy Services

August 14, 2018

Introductions



- *Buena Regional School District*
 - Pasquale Yacovelli – Business Administrator
 - John Vargas – Building & Grounds Supervisor
- *Schneider-Electric*
 - Bryan McGair – Account Executive
- *NJ Clean Energy Program*
 - Brian DeLuca, CEM – Program Manager
 - Vish Nimbalkar, P.E. – Auditor
 - Arif Welcher – BPU Ombudsman

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 Buena Regional 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

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

- Buena Regional High School
- Buena Regional Middle School
- Collings Lakes Elementary School
- John C. Milanesi Elementary School
- J.P. Cleary Elementary School

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	654,129	130.5	0.0	\$104,445	\$518,331	\$72,947	\$445,384	4.3	658,702
Install LED Fixtures	219,428	37.0	0.0	\$35,601	\$247,546	\$23,140	\$224,406	6.3	220,962
Retrofit Fixtures with LED Lamps	428,718	93.2	0.0	\$67,876	\$267,881	\$49,807	\$218,074	3.2	431,715
Install LED Exit Signs	5,983	0.4	0.0	\$967	\$2,904	\$0	\$2,904	3.0	6,025
Lighting Control Measures	100,632	20.1	0.0	\$16,010	\$88,472	\$9,655	\$78,817	4.9	101,335
Install Occupancy Sensor Lighting Controls	85,786	17.7	0.0	\$13,716	\$65,322	\$8,935	\$56,387	4.1	86,386
Install Daylight Dimming Controls	4,121	0.3	0.0	\$607	\$3,250	\$720	\$2,530	4.2	4,150
Install High/Low Lighting Controls	10,725	2.1	0.0	\$1,686	\$19,900	\$0	\$19,900	11.8	10,800
Motor Upgrades	3,629	0.8	0.0	\$553	\$38,379	\$0	\$38,379	69.4	3,654
Premium Efficiency Motors	3,629	0.8	0.0	\$553	\$38,379	\$0	\$38,379	69.4	3,654
Variable Frequency Drive (VFD) Measures	178,658	42.7	0.0	\$28,664	\$82,975	\$14,435	\$68,540	2.4	179,907
Install VFD on Variable Air Volume (VAV) HVAC	20,011	5.7	0.0	\$3,115	\$9,610	\$2,075	\$7,535	2.4	20,150
Install VFDs on Constant Volume (CV) HVAC	107,964	32.9	0.0	\$17,829	\$56,127	\$12,360	\$43,767	2.5	108,719
Install VFDs on Chilled Water Pumps	9,326	1.0	0.0	\$1,572	\$3,607	\$0	\$3,607	2.3	9,391
Install VFDs on Hot Water Pumps	41,358	3.2	0.0	\$6,148	\$13,631	\$0	\$13,631	2.2	41,647
Electric Unitary HVAC Measures	55,711	28.9	0.0	\$8,243	\$141,765	\$4,543	\$137,222	16.6	56,101
Install High Efficiency Electric AC	7,077	7.3	0.0	\$1,076	\$107,981	\$2,328	\$105,653	98.2	7,126
Install High Efficiency Heat Pumps	48,635	21.6	0.0	\$7,167	\$33,784	\$2,215	\$31,569	4.4	48,975
Electric Chiller Replacement	101,997	71.0	0.0	\$16,464	\$159,173	\$15,750	\$143,423	8.7	102,710
Install High Efficiency Chillers	101,997	71.0	0.0	\$16,464	\$159,173	\$15,750	\$143,423	8.7	102,710
Gas Heating (HVAC/Process) Replacement	0	0.0	180.3	\$1,860	\$121,629	\$3,712	\$117,918	63.4	21,111
Install High Efficiency Hot Water Boilers	0	0.0	180.3	\$1,860	\$121,629	\$3,712	\$117,918	63.4	21,111
HVAC System Improvements	2,143	0.0	16.5	\$487	\$2,719	\$0	\$2,719	5.6	4,086
Implement Demand Control Ventilation	2,143	0.0	16.5	\$487	\$2,719	\$0	\$2,719	5.6	4,086
Domestic Water Heating Upgrade	2,489	0.0	91.1	\$1,273	\$27,825	\$200	\$27,625	21.7	13,176
Install High Efficiency Gas Water Heater	0	0.0	73.3	\$681	\$26,146	\$200	\$25,946	38.1	8,578
Install Low-Flow Domestic Hot Water Devices	2,489	0.0	17.9	\$592	\$1,680	\$0	\$1,680	2.8	4,598
Food Service Equipment & Refrigeration Measures	7,053	0.6	0.0	\$1,170	\$5,471	\$150	\$5,321	4.5	7,102
Refrigerator/Freezer Case Electrically Commutated Motors	4,284	0.5	0.0	\$711	\$2,123	\$0	\$2,123	3.0	4,314
Refrigeration Controls	2,768	0.1	0.0	\$459	\$3,348	\$150	\$3,198	7.0	2,788
Plug Load Equipment Control - Vending Machine	12,895	0.0	0.0	\$2,031	\$1,690	\$0	\$1,690	0.8	12,985
Vending Machine Control	12,895	0.0	0.0	\$2,031	\$1,690	\$0	\$1,690	0.8	12,985
TOTALS	1,119,334	294.5	287.9	\$181,200	\$1,188,429	\$121,391	\$1,067,038	5.9	1,160,870

* - 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 the expedited 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		654,129	130.5	0.0	\$104,445	\$518,331	\$72,947	\$445,384	4.3	658,702
ECM 1	Install LED Fixtures	219,428	37.0	0.0	\$35,601	\$247,546	\$23,140	\$224,406	6.3	220,962
ECM 2	Retrofit Fixtures with LED Lamps	428,718	93.2	0.0	\$67,876	\$267,881	\$49,807	\$218,074	3.2	431,715
ECM 3	Install LED Exit Signs	5,983	0.4	0.0	\$967	\$2,904	\$0	\$2,904	3.0	6,025
Lighting Control Measures		99,848	19.8	0.0	\$15,877	\$83,872	\$9,655	\$74,217	4.7	100,546
ECM 4	Install Occupancy Sensor Lighting Controls	85,786	17.7	0.0	\$13,716	\$65,322	\$8,935	\$56,387	4.1	86,386
ECM 5	Install Daylight Dimming Controls	4,121	0.3	0.0	\$607	\$3,250	\$720	\$2,530	4.2	4,150
ECM 6	Install High/Low Lighting Controls	9,941	1.8	0.0	\$1,554	\$15,300	\$0	\$15,300	9.8	10,011
Motor Upgrades		2,161	0.5	0.0	\$336	\$5,311	\$0	\$5,311	15.8	2,176
ECM 7	Premium Efficiency Motors	2,161	0.5	0.0	\$336	\$5,311	\$0	\$5,311	15.8	2,176
Variable Frequency Drive (VFD) Measures		178,658	42.7	0.0	\$28,664	\$82,975	\$14,435	\$68,540	2.4	179,907
ECM 8	Install VFD on Variable Air Volume (VAV) HVAC	20,011	5.7	0.0	\$3,115	\$9,610	\$2,075	\$7,535	2.4	20,150
ECM 9	Install VFDs on Constant Volume (CV) HVAC	107,964	32.9	0.0	\$17,829	\$56,127	\$12,360	\$43,767	2.5	108,719
ECM 10	Install VFDs on Chilled Water Pumps	9,326	1.0	0.0	\$1,572	\$3,607	\$0	\$3,607	2.3	9,391
ECM 11	Install VFDs on Hot Water Pumps	41,358	3.2	0.0	\$6,148	\$13,631	\$0	\$13,631	2.2	41,647
Electric Unitary HVAC Measures		48,635	21.6	0.0	\$7,167	\$33,784	\$2,215	\$31,569	4.4	48,975
ECM 12	Install High Efficiency Heat Pumps	48,635	21.6	0.0	\$7,167	\$33,784	\$2,215	\$31,569	4.4	48,975
Electric Chiller Replacement		101,997	71.0	0.0	\$16,464	\$159,173	\$15,750	\$143,423	8.7	102,710
ECM 13	Install High Efficiency Chillers	101,997	71.0	0.0	\$16,464	\$159,173	\$15,750	\$143,423	8.7	102,710
HVAC System Improvements		2,143	0.0	16.5	\$487	\$2,719	\$0	\$2,719	5.6	4,086
ECM 14	Implement Demand Control Ventilation	2,143	0.0	16.5	\$487	\$2,719	\$0	\$2,719	5.6	4,086
Domestic Water Heating Upgrade		2,489	0.0	17.9	\$592	\$1,680	\$0	\$1,680	2.8	4,598
ECM 15	Install Low-Flow Domestic Hot Water Devices	2,489	0.0	17.9	\$592	\$1,680	\$0	\$1,680	2.8	4,598
Food Service Equipment & Refrigeration Measures		7,053	0.6	0.0	\$1,170	\$5,471	\$150	\$5,321	4.5	7,102
ECM 16	Refrigerator/Freezer Case Electrically Commutated Motors	4,284	0.5	0.0	\$711	\$2,123	\$0	\$2,123	3.0	4,314
ECM 17	Refrigeration Controls	2,768	0.1	0.0	\$459	\$3,348	\$150	\$3,198	7.0	2,788
Plug Load Equipment Control - Vending Machine		12,895	0.0	0.0	\$2,031	\$1,690	\$0	\$1,690	0.8	12,985
ECM 18	Vending Machine Control	12,895	0.0	0.0	\$2,031	\$1,690	\$0	\$1,690	0.8	12,985
TOTALS		1,110,006	286.6	34.3	\$177,234	\$895,005	\$115,152	\$779,854	4.4	1,121,787

* - 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).

Benchmarking



Collings Lakes Elementary School

ENERGY STAR® Statement of Energy Performance

90

ENERGY STAR® Score¹

Collings Lakes Elementary School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 32,766
Built: 1968

For Year Ending: April 30, 2017
Date Generated: May 23, 2018

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 Collings Lakes Elementary School 620 Cairns Mill Road Williamstown, New Jersey 08094	Property Owner Buena Regional School District 914 Main Avenue Richland, NJ 08350 (856) 697-0800	Primary Contact Joe Bluck, Jr. 914 Main Avenue Richland, NJ 08350 (856) 697-0800 jbluck@buena.k12.nj.us
Property ID: 6358234		
Energy Consumption and Energy Use Intensity (EUI)		
Site EUI 34.7 kBtu/ft ²	Annual Energy by Fuel Electric - Grid (kBtu) 1,137,039 (100%)	National Median Comparison National Median Site EUI (kBtu/ft ²) 56.1 National Median Source EUI (kBtu/ft ²) 176.2 % Diff from National Median Source EUI -38%
Source EUI 109 kBtu/ft ²	Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 126	

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
Buena Regional High School	57
Buena Regional Middle School	11
Collings Lakes Elementary School	90
John C. Milanesi Elementary School	15
J.P. Cleary Elementary School	43

Buena Regional High School



Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	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			263,632	49.1	0.0	0.0	\$41,034.44	\$194,971.18	\$30,675.00	\$164,296.18	4.0	265,475
ECM 1	Install LED Fixtures	Yes	64,713	10.8	0.0	0.0	\$10,072.68	\$81,968.52	\$9,540.00	\$72,428.52	7.2	65,166
ECM 2	Retrofit Fixtures with LED Lamps	Yes	196,422	38.1	0.0	0.0	\$30,573.17	\$111,389.33	\$21,135.00	\$90,254.33	3.0	197,795
ECM 3	Install LED Exit Signs	Yes	2,497	0.2	0.0	0.0	\$388.60	\$1,613.33	\$0.00	\$1,613.33	4.2	2,514
Lighting Control Measures			46,107	8.8	0.0	0.0	\$7,176.61	\$38,610.00	\$3,955.00	\$34,655.00	4.8	46,430
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	41,637	8.0	0.0	0.0	\$6,480.81	\$30,510.00	\$3,955.00	\$26,555.00	4.1	41,928
ECM 5	Install High/Low Lighting Controls	Yes	4,470	0.8	0.0	0.0	\$695.80	\$8,100.00	\$0.00	\$8,100.00	11.6	4,502
Motor Upgrades			2,161	0.5	0.0	0.0	\$336.38	\$5,310.98	\$0.00	\$5,310.98	15.8	2,176
ECM 6	Premium Efficiency Motors	Yes	2,161	0.5	0.0	0.0	\$336.38	\$5,310.98	\$0.00	\$5,310.98	15.8	2,176
Variable Frequency Drive (VFD) Measures			20,011	5.7	0.0	0.0	\$3,114.65	\$9,610.15	\$2,075.00	\$7,535.15	2.4	20,150
ECM 7	Install VFD on Variable Air Volume (VAV) HVAC	Yes	20,011	5.7	0.0	0.0	\$3,114.65	\$9,610.15	\$2,075.00	\$7,535.15	2.4	20,150
Electric Unitary HVAC Measures			1,895	1.4	0.0	0.0	\$294.92	\$66,479.15	\$0.00	\$66,479.15	225.4	1,908
	Install High Efficiency Electric AC	No	1,895	1.4	0.0	0.0	\$294.92	\$66,479.15	\$0.00	\$66,479.15	225.4	1,908
Electric Chiller Replacement			56,669	38.0	0.0	0.0	\$8,820.52	\$73,854.40	\$6,750.00	\$67,104.40	7.6	57,065
ECM 8	Install High Efficiency Chillers	Yes	56,669	38.0	0.0	0.0	\$8,820.52	\$73,854.40	\$6,750.00	\$67,104.40	7.6	57,065
HVAC System Improvements			2,143	0.0	16.5	16.5	\$486.63	\$2,718.84	\$0.00	\$2,718.84	5.6	4,086
ECM 9	Implement Demand Control Ventilation	Yes	2,143	0.0	16.5	16.5	\$486.63	\$2,718.84	\$0.00	\$2,718.84	5.6	4,086
Domestic Water Heating Upgrade			0	0.0	73.3	73.3	\$681.10	\$26,145.52	\$200.00	\$25,945.52	38.1	8,578
	Install High Efficiency Gas Water Heater	No	0	0.0	73.3	73.3	\$681.10	\$26,145.52	\$200.00	\$25,945.52	38.1	8,578
Plug Load Equipment Control - Vending Machine			8,059	0.0	0.0	0.0	\$1,254.42	\$1,000.00	\$0.00	\$1,000.00	0.8	8,116
ECM 10	Vending Machine Control	Yes	8,059	0.0	0.0	0.0	\$1,254.42	\$1,000.00	\$0.00	\$1,000.00	0.8	8,116
TOTALS FOR HIGH PRIORITY MEASURES			398,782	102.0	16.5	16.5	\$62,223.66	\$326,075.55	\$43,455.00	\$282,620.55	4.5	403,498
TOTALS FOR ALL EVALUATED MEASURES			400,677	103.5	163.0	163.0	\$63,880.77	\$444,845.74	\$47,655.00	\$397,190.74	6.2	422,562

* - 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).

Buena Regional Middle 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			246,303	44.0	0.0	\$40,839.74	\$181,028.52	\$19,605.00	\$161,423.52	4.0	248,025
ECM 1	Install LED Fixtures	Yes	118,342	19.2	0.0	\$19,622.39	\$114,059.53	\$7,450.00	\$106,609.53	5.4	119,169
ECM 2	Retrofit Fixtures with LED Lamps	Yes	124,685	24.6	0.0	\$20,674.11	\$65,785.88	\$12,155.00	\$53,630.88	2.6	125,557
ECM 3	Install LED Exit Signs	Yes	3,276	0.2	0.0	\$543.24	\$1,183.11	\$0.00	\$1,183.11	2.2	3,299
Lighting Control Measures			36,117	7.1	0.0	\$5,988.66	\$25,254.00	\$3,265.00	\$21,989.00	3.7	36,370
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	33,286	6.6	0.0	\$5,519.19	\$21,054.00	\$3,265.00	\$17,789.00	3.2	33,519
ECM 5	Install High/Low Lighting Controls	Yes	2,831	0.6	0.0	\$469.47	\$4,200.00	\$0.00	\$4,200.00	8.9	2,851
Variable Frequency Drive (VFD) Measures			78,704	25.7	0.0	\$13,049.99	\$33,481.65	\$8,000.00	\$25,481.65	2.0	79,254
ECM 6	Install VFDs on Constant Volume (CV) HVAC	Yes	78,704	25.7	0.0	\$13,049.99	\$33,481.65	\$8,000.00	\$25,481.65	2.0	79,254
Domestic Water Heating Upgrade			0	0.0	17.9	\$178.91	\$1,529.18	\$0.00	\$1,529.18	8.5	2,092
ECM 7	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	17.9	\$178.91	\$1,529.18	\$0.00	\$1,529.18	8.5	2,092
Food Service Equipment & Refrigeration Measures			5,404	0.4	0.0	\$896.01	\$4,864.50	\$150.00	\$4,714.50	5.3	5,442
ECM 8	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	2,635	0.3	0.0	\$436.97	\$1,516.50	\$0.00	\$1,516.50	3.5	2,654
ECM 9	Refrigeration Controls	Yes	2,768	0.1	0.0	\$459.04	\$3,348.00	\$150.00	\$3,198.00	7.0	2,788
TOTALS FOR HIGH PRIORITY MEASURES			366,528	77.4	17.9	\$60,953.31	\$246,157.85	\$31,020.00	\$215,137.85	3.5	371,183

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Collings Lakes Elementary 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			23,577	3.7	0.0	\$3,914.54	\$24,824.88	\$1,952.00	\$22,872.88	5.8	23,742
ECM 1	Install LED Fixtures	Yes	21,567	2.8	0.0	\$3,580.80	\$23,045.63	\$1,500.00	\$21,545.63	6.0	21,718
ECM 2	Retrofit Fixtures with LED Lamps	Yes	2,010	0.9	0.0	\$333.73	\$1,779.25	\$452.00	\$1,327.25	4.0	2,024
Lighting Control Measures			867	0.4	0.0	\$144.02	\$540.00	\$70.00	\$470.00	3.3	874
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	867	0.4	0.0	\$144.02	\$540.00	\$70.00	\$470.00	3.3	874
Domestic Water Heating Upgrade			2,489	0.0	0.0	\$413.17	\$150.57	\$0.00	\$150.57	0.4	2,506
ECM 4	Install Low-Flow Domestic Hot Water Devices	Yes	2,489	0.0	0.0	\$413.17	\$150.57	\$0.00	\$150.57	0.4	2,506
Food Service Equipment & Refrigeration Measures			1,649	0.1	0.0	\$273.78	\$606.60	\$0.00	\$606.60	2.2	1,661
ECM 5	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,649	0.1	0.0	\$273.78	\$606.60	\$0.00	\$606.60	2.2	1,661
Plug Load Equipment Control - Vending Machine			1,612	0.0	0.0	\$267.61	\$230.00	\$0.00	\$230.00	0.9	1,623
ECM 6	Vending Machine Control	Yes	1,612	0.0	0.0	\$267.61	\$230.00	\$0.00	\$230.00	0.9	1,623
TOTALS FOR HIGH PRIORITY MEASURES			30,194	4.2	0.0	\$5,013.13	\$26,352.05	\$2,022.00	\$24,330.05	4.9	30,405
TOTALS FOR ALL EVALUATED MEASURES			30,194	4.2	0.0	\$5,013.13	\$26,352.05	\$2,022.00	\$24,330.05	4.9	30,405

* - 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.

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John C. Milanesi Elementary 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			41,424	14.7	0.0	\$6,984.89	\$55,160.88	\$8,225.00	\$46,935.88	6.7	41,713
ECM 1	Install LED Fixtures	Yes	6,752	1.0	0.0	\$1,138.53	\$13,626.31	\$850.00	\$12,776.31	11.2	6,799
ECM 2	Retrofit Fixtures with LED Lamps	Yes	34,461	13.7	0.0	\$5,810.91	\$41,427.01	\$7,375.00	\$34,052.01	5.9	34,702
ECM 3	Install LED Exit Signs	Yes	210	0.0	0.0	\$35.45	\$107.56	\$0.00	\$107.56	3.0	212
Lighting Control Measures			5,437	1.9	0.0	\$916.82	\$12,008.00	\$840.00	\$11,168.00	12.2	5,475
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	4,653	1.7	0.0	\$784.64	\$7,408.00	\$840.00	\$6,568.00	8.4	4,686
	Install High/Low Lighting Controls	No	784	0.3	0.0	\$132.18	\$4,600.00	\$0.00	\$4,600.00	34.8	789
Variable Frequency Drive (VFD) Measures			33,806	6.9	0.0	\$5,700.34	\$22,819.25	\$3,200.00	\$19,619.25	3.4	34,042
ECM 5	Install VFDs on Constant Volume (CV) HVAC	Yes	21,978	5.2	0.0	\$3,706.01	\$13,197.15	\$3,200.00	\$9,997.15	2.7	22,132
ECM 6	Install VFDs on Chilled Water Pumps	Yes	9,326	1.0	0.0	\$1,572.48	\$3,606.80	\$0.00	\$3,606.80	2.3	9,391
ECM 7	Install VFDs on Hot Water Pumps	Yes	2,502	0.8	0.0	\$421.86	\$6,015.30	\$0.00	\$6,015.30	14.3	2,519
Electric Unitary HVAC Measures			813	0.9	0.0	\$137.07	\$6,588.48	\$138.00	\$6,450.48	47.1	819
	Install High Efficiency Electric AC	No	813	0.9	0.0	\$137.07	\$6,588.48	\$138.00	\$6,450.48	47.1	819
Electric Chiller Replacement			45,328	33.0	0.0	\$7,643.25	\$85,318.42	\$9,000.00	\$76,318.42	10.0	45,645
ECM 8	Install High Efficiency Chillers	Yes	45,328	33.0	0.0	\$7,643.25	\$85,318.42	\$9,000.00	\$76,318.42	10.0	45,645
Gas Heating (HVAC/Process) Replacement			0	0.0	180.3	\$1,860.42	\$121,629.29	\$3,711.76	\$117,917.53	63.4	21,111
	Install High Efficiency Hot Water Boilers	No	0	0.0	180.3	\$1,860.42	\$121,629.29	\$3,711.76	\$117,917.53	63.4	21,111
Plug Load Equipment Control - Vending Machine			1,612	0.0	0.0	\$271.79	\$230.00	\$0.00	\$230.00	0.8	1,623
ECM 9	Vending Machine Control	Yes	1,612	0.0	0.0	\$271.79	\$230.00	\$0.00	\$230.00	0.8	1,623
TOTALS FOR HIGH PRIORITY MEASURES			126,823	56.3	0.0	\$21,384.90	\$170,936.55	\$21,265.00	\$149,671.55	7.0	127,709
TOTALS FOR ALL EVALUATED MEASURES			128,419	57.5	180.3	\$23,514.58	\$303,754.32	\$25,114.76	\$278,639.56	11.8	150,428

* - 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).

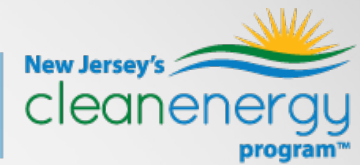
J.P. Cleary Elementary School



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			79,193	19.0	0.0	\$11,671.00	\$62,345.48	\$12,490.00	\$49,855.48	4.3	79,747
ECM 1	Install LED Fixtures	Yes	8,054	3.1	0.0	\$1,186.87	\$14,845.73	\$3,800.00	\$11,045.73	9.3	8,110
ECM 2	Retrofit Fixtures with LED Lamps	Yes	71,140	16.0	0.0	\$10,484.12	\$47,499.76	\$8,690.00	\$38,809.76	3.7	71,637
Lighting Control Measures			12,102	1.8	0.0	\$1,783.57	\$12,060.00	\$1,525.00	\$10,535.00	5.9	12,187
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	5,342	1.1	0.0	\$787.30	\$5,810.00	\$805.00	\$5,005.00	6.4	5,380
ECM 4	Install Daylight Dimming Controls	Yes	4,121	0.3	0.0	\$607.28	\$3,250.00	\$720.00	\$2,530.00	4.2	4,150
ECM 5	Install High/Low Lighting Controls	Yes	2,639	0.4	0.0	\$388.98	\$3,000.00	\$0.00	\$3,000.00	7.7	2,658
Motor Upgrades			1,467	0.3	0.0	\$216.27	\$33,068.40	\$0.00	\$33,068.40	152.9	1,478
	Premium Efficiency Motors	No	1,467	0.3	0.0	\$216.27	\$33,068.40	\$0.00	\$33,068.40	152.9	1,478
Variable Frequency Drive (VFD) Measures			46,138	4.4	0.0	\$6,799.49	\$17,063.96	\$1,160.00	\$15,903.96	2.3	46,460
ECM 6	Install VFDs on Constant Volume (CV) HVAC	Yes	7,281	1.9	0.0	\$1,073.10	\$9,448.06	\$1,160.00	\$8,288.06	7.7	7,332
ECM 7	Install VFDs on Hot Water Pumps	Yes	38,856	2.5	0.0	\$5,726.39	\$7,615.90	\$0.00	\$7,615.90	1.3	39,128
Electric Unitary HVAC Measures			53,004	26.5	0.0	\$7,811.37	\$68,696.94	\$4,404.68	\$64,292.27	8.2	53,374
	Install High Efficiency Electric AC	No	4,369	5.0	0.0	\$643.90	\$34,913.10	\$2,190.00	\$32,723.10	50.8	4,400
ECM 8	Install High Efficiency Heat Pumps	Yes	48,635	21.6	0.0	\$7,167.47	\$33,783.84	\$2,214.68	\$31,569.17	4.4	48,975
Plug Load Equipment Control - Vending Machine			1,612	0.0	0.0	\$237.54	\$230.00	\$0.00	\$230.00	1.0	1,623
ECM 9	Vending Machine Control	Yes	1,612	0.0	0.0	\$237.54	\$230.00	\$0.00	\$230.00	1.0	1,623
TOTALS FOR HIGH PRIORITY MEASURES			187,680	46.8	0.0	\$27,659.07	\$125,483.28	\$17,389.68	\$108,093.61	3.9	188,992
TOTALS FOR ALL EVALUATED MEASURES			193,516	52.1	0.0	\$28,519.23	\$193,464.79	\$19,579.68	\$173,885.11	6.1	194,870

* - 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).



Solar Energy Generation Potential

	Buena Regional High School	Buena Regional Middle School	Collings Lakes Elementary School	John C. Milanese Elementary	J.P. Cleary Elementary School
<i>Potential:</i>	HIGH	HIGH	HIGH	HIGH	MEDIUM
<i>System Potential:</i>	400 kW	400 kW	80 kW	185 kW	197 kW
<i>Electric Generation:</i>	476,549 kWh per year	476,549 kWh per year	95,310 kWh per year	220,404 kWh per year	148,232 kWh per year
<i>Displaced Cost:</i>	\$41,460 per year	\$41,460 per year	\$8,290 per year	\$19,180 per year	\$12,900 per year

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

- 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

Equipment Rebates:

- SmartStart Retrofit
- SmartStart New Construction
- Direct Install
- Large Energy Users

INCENTIVE PROGRAMS

Whole Buildings:

- Pay for Performance Existing Buildings
- Pay for Performance New Construction

Energy Generation:

- Combined Heat and Power (CHP)

OTHER PROGRAMS

Renewable Energy Generation:

- SREC Registration Program (SRP)

* eligible programs are highlighted in yellow

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 certain equipment
- 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!

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

Hutchinson Mechanical Services

Ed Hutchinson

856-429-5828 x215

edhutchinson@hutchbiz.com

Direct Install: Financing Option



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



Financing Options – SmartStart & P4P



- 0% Financing
- Up to \$100,000 for 5 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



P4P Existing Buildings: Overview



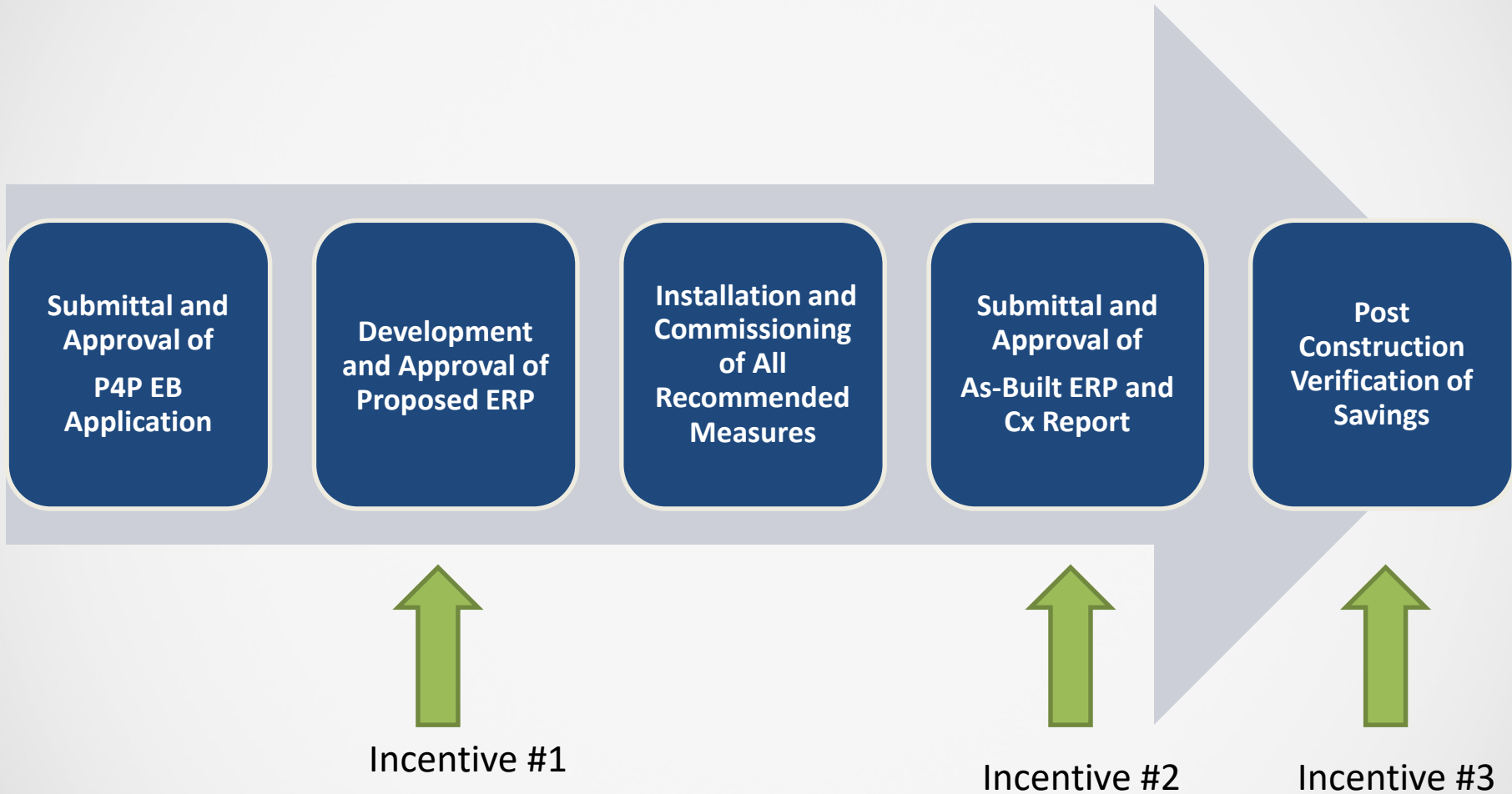
- Comprehensive, whole-building approach to saving energy in existing or new facilities
- Customer chooses from network of pre-approved participating Partners
- Incentives up to \$2 million per project
 - \$1 million for electric measures
 - \$1 million for gas measures
- \$4 million annual entity cap per fiscal year
- Incentives up to 50% of total project cost
- Incentives paid in three installments at milestones

P4P Existing Buildings: Overview



- Open to Commercial and Industrial facilities with annual peak demand of at least 200 kW in previous year
- Minimum savings 15% from existing energy use
- Must have at least two unique measures per project
- No more than 50% of total savings may come from lighting measures
 - Lighting savings up to 70% may be considered with minimum savings target increasing up to 35%

P4P EB: Process



P4P EB: Incentives



Incentive #1: Energy Reduction Plan			
Incentive Amount:		\$0.15	per sq ft
Minimum Incentive:		\$7,500	
Maximum Incentive:		\$50,000	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

Recommended NJCEP Incentives per Building



Entity Name	SmartStart	Direct Install	Pay For Performance	SREC Registration Program (SRP) for potential Solar Projects*
Buena Regional High School	X			X
Buena Regional Middle School	X			X
Collings Lakes Elementary School	X	X		X
John C. Milanesi Elementary School	X			X
J.P. Cleary Elementary School	X		X	X

* These buildings have a *high potential* for the implementation of a PV system. The SREC registration program is provided to register produced SRECs and is not an incentive or rebate program.

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

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