# New Jersey's Clean Energy Program

### LGEA Exit Meeting for: Fair Lawn Board of Education

October 28, 2019





## INTRODUCTIONS

### Fair Lawn Board of Education

- Patricia Ratcliffe-Lee Assistant Business Administrator
- Tom Veldran Assistant to Assistant Business Administrator
- John Yobs Buildings & Grounds Supervisor
- NJ Clean Energy Program
  - Yagna Otia TRC Auditor
  - Amanda Muench TRC Account Manager
  - Mike Mandzik TRC Outreach Manager
  - Amanda Newman TRC Outreach Coordinator
  - Arif Welcher BPU Government Business Manager
  - Michelle Rossi ESIP Coordinator, BPU State Energy Office



## Agenda

- The audit process overview
- Energy use & existing conditions
- Review of Energy Conservation Measures (ECMs) identified
- Questions regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Fair Lawn Board of Education



# LGEA PROCESS

**Application Approval** 

Scheduling Call

Audit

**Benchmarking & Analysis** 

**Draft Report** 

**Exit Meeting Presentation** 

**Final Report** 



# SITE VISIT & UTILITY ANALYSIS

# Overview of Systems, Baseline & Existing Conditions:

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

### **Utility Consumption:**

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

### Sites Visited/Analyzed

- Buildings & Grounds
- Warren Point Elementary School
- Lyncrest Elementary School
- John A. Forest Elementary School
- Memorial Middle School
- Thomas Jefferson Middle School
- Milnes Elementary School
- Redburn Elementary School
- Westmoreland Elementary School
- Fairlawn High School
- Thomas Edison School



## Benchmarking

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

program<sup>\*</sup>

						Buildings
	RGY STAR <sup>®</sup> Sta	itemen	t of Energy			Warren I
LEARN MORE AT Perf	ormance					Lyncrest
58	Fair Lawn High	K-12 Schoo	ol.			John A. F School
	Built: 1943 For Year Ending: Septem	ber 30, 2017				Memoria
ENERGY STAR® Score <sup>1</sup>	Date Generated: June 10,					Thomas
1. The ENERGY STAR score is a 1-10 climate and business activity. Property & Contact Informa	0 assessment of a building's energy o	efficiency as co	mpared with similar buildings nation	wide, adjusting for		Milnes E
Property Address Fair Lawn High School 1400 Berdan Avenue	Property Owner Fair Lawn Board of Ed 3701 Fair Lawn Avenu		Primary Contact Brooke Bartley 3701 Fair Lawn Avenue		kBtu/ft <sup>2</sup>	Radburn
Fair Lawn, New Jersey 07410 ) Property ID: 6775198	Fair Lawn, NJ 07410 (		Fair Lawn, NJ 07410 2017945500 Loartley@fairlawnschools	s.org		Westmo School
Energy Consumption and E Site EUI April Che	rgy by Fuel		dian Comparison			Fair Law
67.7 kBtu/ft <sup>2</sup> Bectric - Gin Natural Gas Source EUI 114.7 kBtu/ft <sup>2</sup>	d (kBtu) 5,808,018 (37%) (kBtu) 9,967,020 (63%)	National Med % Diff from M Annual Emis	tian Site EUI (kBtuft²) tian Source EUI (kBtuft²) lational Median Source EUI isions Gas Emissions (Metric Tons	73.5 124.6 -8% 1,118		Thomas
	sey's					

Building Name	ENERGY STAR <sup>®</sup> Score
Buildings & Grounds Building	58
Warren Point Elementary School	50
Lyncrest Elementary School	56
John A. Forest Elementary School	65
Memorial Middle School	62
Thomas Jefferson Middle School	64
Milnes Elementary School	82
Radburn Elementary School	76
Westmoreland Elementary School	82
Fair Lawn High School	58
Thomas Edison School	68

# 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 <sub>2</sub> e Emissions Reduction (lbs)
	Lighting Upgrades	769,946	225.8	-158.4	\$120,220	\$360,226	\$88,637	\$271,589	2.3	756,781
	Install LED Fixtures	16,375	3.3	-1.5	\$2,771	\$13,422	\$1,125	\$12,297	4.4	16,314
	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	55	0.0	0.0	\$7	\$51	\$5	\$46	6.9	54
	Retrofit Fixtures with LED Lamps	753,516	222.5	-156.9	\$117,443	\$346,754	\$87,507	\$259,247	2.2	740,412
	Lighting Control Measures	203,587	58.9	-42.5	\$31,288	\$237,112	\$23,180	\$213,932	6.8	200,033
	Install Occupancy Sensor Lighting Controls	180,032	52.7	-37.6	\$27,792	\$194,512	\$22,910	\$171,602	6.2	176,885
	Install Daylight Dimming Controls	235	0.0	0.0	\$29	\$750	\$270	\$480	16.8	237
	Install High/Low Lighting Controls	23,319	6.1	-4.9	\$3,468	\$41,850	\$0	\$41,850	12.1	22,911
	Motor Upgrades	1,832	0.5	0.0	\$335	\$7,964	\$0	\$7,964	23.8	1,844
	Premium Efficiency Motors	1,832	0.5	0.0	\$335	\$7,964	\$0	\$7,964	23.8	1,844
	Variable Frequency Drive (VFD) Measures	141,601	34.9	0.0	\$22,445	\$146,378	\$8,150	\$138,228	6.2	142,591
	Install VFDs on Constant Volume (CV) Fans	74,559	24.1	0.0	\$10,539	\$88,445	\$6,600	\$81,845	7.8	75,080
	Install VFDs on Heating Water Pumps	57,874	7.8	0.0	\$10,239	\$49,960	\$0	\$49,960	4.9	58,279
	Install Boiler Draft Fan VFDs	9,168	3.0	0.0	\$1,668	\$7,974	\$1,550	\$6,424	3.9	9,232
	Electric Unitary HVAC Measures	57,307	52.5	0.0	\$7,450	\$432,640	\$15,550	\$417,089	56.0	57,708
	Install High Efficiency Air Conditioning Units	56,057	51.4	0.0	\$7,254	\$422,085	\$15,166	\$406,919	56.1	56,448
	Install High Efficiency Heat Pumps	62	0.1	0.0	\$11	\$1,268	\$69	\$1,199	109.7	62
	Install High Efficiency PTAC/PTHP	1,188	1.0	0.0	\$186	\$9,287	\$315	\$8,972	48.4	1,197
	Gas Heating (HVAC/Process) Replacement	0	0.0	1,068.8	\$9,706	\$782,586	\$9,897	\$772,689	79.6	125,144
	Install High Efficiency Hot Water Boilers	0	0.0	242.2	\$2,243	\$261,417	\$5,097	\$256,320	114.3	28,364
	Install High Efficiency Steam Boilers	0	0.0	631.6	\$5,698	\$458,884	\$0	\$458,884	80.5	73,954
	Install High Efficiency Furnaces	0	0.0	195.0	\$1,765	\$62,285	\$4,800	\$57,485	32.6	22,827
	HVAC System Improvements	7,361	0.0	154.4	\$2,801	\$23,285	\$0	\$23,285	8.3	25,491
	Implement Demand Control Ventilation (DCV)	7,361	0.0	133.4	\$2,603	\$23,110	\$0	\$23,110	8.9	23,037
	Install Pipe Insulation	0	0.0	21.0	\$199	\$175	\$0	\$175	0.9	2,454
	Domestic Water Heating Upgrade	0	0.0	865.8	\$7,996	\$3,606	\$0	\$3,606	0.5	101,378
	Install Low-Flow DHW Devices	0	0.0	865.8	\$7,996	\$3,606	\$0	\$3,606	0.5	101,378
	Food Service Equipment & Refrigeration Measures	6,472	0.4	0.0	\$1,183	\$9,944	\$350	\$9,594	8.1	6,517
	Refrigerator/Freezer Case Electrically Commutated Motors	2,356	0.3	0.0	\$431	\$2,730	\$0	\$2,730	6.3	2,372
N	Refrigeration Controls	4,116	0.1	0.0	\$752	\$7,215	\$350	\$6,865	9.1	4,145
C	Plug Load Equipment Control - Vending Machine	13,237	1.5	0.0	\$1,896	\$2,070	\$400	\$1,670	0.9	13,330
	Vending Machine Control	13,237	1.5	0.0	\$1,896	\$2,070	\$400	\$1,670	0.9	13,330
	TOTALS	1,201,342	374.5	1,888.1	\$205,321	\$2,005,811	\$146,164	\$1,859,647	9.1	1,430,818



## 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 <sub>2</sub> e Emissions Reduction (Ibs)
Lighting Upgrades	769,946	225.8	-158.4	\$120,220	\$360,226	\$88,637	\$271,589	2.3	756,781
ECM 1 Install LED Fixtures	16,375	3.3	-1.5	\$2,771	\$13,422	\$1,125	\$12,297	4.4	16,314
ECM 2 Retrofit Fluorescent Fixtures with LED Lamps and Drivers	55	0.0	0.0	\$7	\$51	\$5	\$46	6.9	54
ECM 3 Retrofit Fixtures with LED Lamps	753,516	222.5	-156.9	\$117,443	\$346,754	\$87,507	\$259,247	2.2	740,412
Lighting Control Measures	202,967	58.8	-42.4	\$31,195	\$235,237	\$22,910	\$212,327	6.8	199,419
ECM 4 Install Occupancy Sensor Lighting Controls	180,032	52.7	-37.6	\$27,792	\$194,512	\$22,910	\$171,602	6.2	176,885
ECM 5 Install High/Low Lighting Controls	22,935	6.0	-4.8	\$3,403	\$40,725	\$0	\$40,725	12.0	22,534
Variable Frequency Drive (VFD) Measures	135,116	32.5	0.0	\$21,578	\$130,985	\$8,150	\$122,835	5.7	136,061
ECM 6 Install VFDs on Constant Volume (CV) Fans	74,559	24.1	0.0	\$10,539	\$88,445	\$6,600	\$81,845	7.8	75,080
ECM 7 Install VFDs on Heating Water Pumps	51,389	5.4	0.0	\$9,372	\$34,567	\$0	\$34,567	3.7	51,748
ECM 8 Install Boiler Draft Fan VFDs	9,168	3.0	0.0	\$1,668	\$7,974	\$1,550	\$6,424	3.9	9,232
HVAC System Improvements	6,293	0.0	67.3	\$1,777	\$4,254	\$0	\$4,254	2.4	14,212
ECM 9 Implement Demand Control Ventilation (DCV)	6,293	0.0	46.3	\$1,578	\$4,078	\$0	\$4,078	2.6	11,758
ECM 10 Install Pipe Insulation	0	0.0	21.0	\$199	\$175	\$0	\$175	0.9	2,454
Domestic Water Heating Upgrade	0	0.0	865.8	\$7,996	\$3,606	\$0	\$3,606	0.5	101,378
ECM 11 Install Low-Flow DHW Devices	0	0.0	865.8	\$7,996	\$3,606	\$0	\$3,606	0.5	101,378
Food Service Equipment & Refrigeration Measures	6,472	0.4	0.0	\$1,183	\$9,944	\$350	\$9,594	8.1	6,517
ECM 12 Refrigerator/Freezer Case Electrically Commutated Motors	2,356	0.3	0.0	\$431	\$2,730	\$0	\$2,730	6.3	2,372
ECM 13 Refrigeration Controls	4,116	0.1	0.0	\$752	\$7,215	\$350	\$6,865	9.1	4,145
Plug Load Equipment Control - Vending Machine	13,237	1.5	0.0	\$1,896	\$2,070	\$400	\$1,670	0.9	13,330
ECM 14 Vending Machine Control	13,237	1.5	0.0	\$1,896	\$2,070	\$400	\$1,670	0.9	13,330
TOTALS	1,134,031	319.0	732.2	\$185,846	\$746,322	\$120,447	\$625,875	3.4	1,227,697

\* - 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).



## BUILDINGS & GROUNDS

Energy Conservation Measure	Cost Effective?	Savings	Savings	Savings	Annual Energy Cost Savings	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Net Cost	Period	CO <sub>2</sub> e Emissions Reduction
		(KWN)	(KVV)	(IMIMBtu)	(\$)				(yrs)**	(Ibs)
Upgrades		16,444	3.4	-3	\$3,209	\$4,451	\$1,049	\$3,402	1.1	16,156
Retrofit Fixtures with LED Lamps	Yes	16,444	3.4	-3	\$3,209	\$4,451	\$1,049	\$3,402	1.1	16,156
Control Measures		2,797	0.6	-1	\$546	\$1,963	\$130	\$1,833	3.4	2,748
Install Occupancy Sensor Lighting Controls	Yes	2,538	0.5	-1	\$495	\$1,738	\$130	\$1,608	3.2	2,494
Install High/Low Lighting Controls	Yes	259	0.1	0	\$51	\$225	\$0	\$225	4.4	255
Ipgrades		291	0.0	0	\$57	\$2,240	\$0	\$2,240	39.0	293
Premium Efficiency Motors	No	291	0.0	0	\$57	\$2,240	\$0	\$2,240	39.0	293
ic Water Heating Upgrade		0	0.0	10	\$105	\$79	\$0	\$79	0.8	1,222
Install Low-Flow DHW Devices	Yes	0	0.0	10	\$105	\$79	\$0	\$79	0.8	1,222
TOTALS (COST EFFECTIVE MEASURES)		19,241	3.9	6	\$3,860	\$6,493	\$1,179	\$5,314	1.4	20,127
TOTALS (ALL MEASURES)		19,532	4.0	6	\$3,918	\$8,733	\$1,179	\$7,554	1.9	20,420
	Upgrades Retrofit Fixtures with LED Lamps Control Measures Install Occupancy Sensor Lighting Controls Install High/Low Lighting Controls Upgrades Premium Efficiency Motors ic Water Heating Upgrade Install Low-Flow DHW Devices TOTALS (COST EFFECTIVE MEASURES)	Energy Conservation Measure       Effective?         Upgrades          Retrofit Fixtures with LED Lamps       Yes         Control Measures          Install Occupancy Sensor Lighting Controls       Yes         Install Occupancy Sensor Lighting Controls       Yes         Upgrades          Premium Efficiency Motors       No         ic Water Heating Upgrade       Yes         Install Low-Flow DHW Devices       Yes         TOTALS (COST EFFECTIVE MEASURES)       Yes	Energy Conservation MeasureCost Effective?Electric Savings (kWh)Upgrades16,444Retrofit Fixtures with LED LampsYes16,444Control MeasuresYes16,444Control MeasuresYes2,797Install Occupancy Sensor Lighting ControlsYes2,538Install High/Low Lighting ControlsYes259OpgradesNo291Premium Efficiency MotorsNo291ic Water Heating Upgrade00Install Low-Flow DHW DevicesYes0TOTALS (COST EFFECTIVE MEASURES)Yes0	Energy Conservation MeasureCost Effective?Electric Savings (kWh)Demand Savings (kWh)Upgrades16,4443.4Retrofit Fixtures with LED LampsYes16,4443.4Control MeasuresYes16,4443.4Control MeasuresYes2,7970.6Install Occupancy Sensor Lighting ControlsYes2,5380.5Install High/Low Lighting ControlsYes2590.1OpgradesNo2910.00Premium Efficiency MotorsNo2910.0Install Low-Flow DHW DevicesYes00.0TOTALS (COST EFFECTIVE MEASURES)Yes03.9	Energy Conservation MeasureCost Effective?Electric Savings (kW)Peul Savings (kW)Upgrades16,4443.4-3Retrofit Fixtures with LED LampsYes16,4443.4-3Control MeasuresYes16,4443.4-3Install Occupancy Sensor Lighting ControlsYes2,7970.6-1Install High/Low Lighting ControlsYes2,5380.5-1Install High/Low Lighting ControlsYes2590.10Premium Efficiency MotorsNo2910.00Install Low-Flow DHW DevicesYes00.010Install Low-Flow DHW DevicesYes00.010TOTALS (COST EFFECTIVE MEASURES)Yes19,2413.96	Energy Conservation MeasureAnnual Cost Effective?Peak Cost Savings (kW)Annual Fuel Savings (kW)Energy Cost Savings (kW)Upgrades16,4443.4-3\$3,209Retrofit Fixtures with LED LampsYes16,4443.4-3\$3,209Control MeasuresYes2,7970.6-1\$546Install Occupancy Sensor Lighting ControlsYes2,5380.5-1\$495Install High/Low Lighting ControlsYes2590.10\$51Premium Efficiency MotorsNo2910.00\$57Install Low-Flow DHW DevicesYes00.010\$105Install Low-Flow DHW DevicesYes00.0\$105TOTALS (COST EFFECTIVE MEASURES)Install High/Low3.96\$3,860	Energy Conservation MeasureCost Effective?Annual Electric Savings (kWh)Peak Peak Savings (kWh)Annual Fuel Savings (kWh)Energy Cost Savings (s)Estimated Install Cost (s)Upgrades16,4443.4-3\$3,209\$4,451Retrofit Fixtures with LED LampsYes16,4443.4-3\$3,209\$4,451Control MeasuresYes16,4443.4-3\$3,209\$4,451Install Occupancy Sensor Lighting ControlsYes2,7970.6-1\$546\$1,963Install High/Low Lighting ControlsYes2,5380.5-1\$495\$1,738Install High/Low Lighting ControlsYes2910.00\$57\$2,240Premium Efficiency MotorsNo2910.010\$105\$79Install Low-Flow DHW DevicesYes00.010\$105\$79TOTALS (COST EFFECTIVE MEASURES)Yes19,2413.96\$3,860\$6,493	Energy Conservation MeasureCost Effective?Annual Electric Savings (KWh)Peak Demand Savings (KWh)Annual Fuel Savings (KWh)Energy Cost Savings (S)Estimated Incentive (S)Upgrades16,4443.4-3\$3,209\$4,451\$1,049Retrofit Fixtures with LED LampsYes16,4443.4-3\$3,209\$4,451\$1,049Control MeasuresYes16,4443.4-3\$3,209\$4,451\$1,049Install Occupancy Sensor Lighting ControlsYes2,7970.6-1\$546\$1,963\$130Install High/Low Lighting ControlsYes2590.10\$51\$225\$0IpgradesNo2910.00\$57\$2,240\$0Premium Efficiency MotorsNo2910.010\$105\$79\$0Install Low-Flow DHW DevicesYes00.010\$105\$79\$0TOTALS (COST EFFECTIVE MEASURES)Yes19,2413.96\$3,860\$6,493\$1,179	Energy Conservation MeasureCost Effective?Annual Electric Savings (kW)Peak Peak Savings (kW)Annual Fuel Savings (kW)Energy Cost Savings (s)Estimated Install Cost (s)Estimated Net Cost (s)Upgrades16,4443.4-3\$3,209\$4,451\$1,049\$3,402Retrofit Fixtures with LED LampsYes16,4443.4-3\$3,209\$4,451\$1,049\$3,402Control MeasuresYes2,7970.6-1\$546\$1,963\$10\$1,833Install Occupancy Sensor Lighting ControlsYes2,5380.5-1\$495\$1,738\$130\$1,608Install High/Low Lighting ControlsYes2590.10\$51\$225\$0\$225pgradesNo2910.00\$57\$2,240\$0\$2,240ic Water Heating UpgradeNo2910.010\$105\$79\$0\$79Install Low-Flow DHW DevicesYes00.010\$105\$79\$0\$79TOTALS (COST EFFECTIVE MEASURES)Yes00.010\$105\$79\$0\$79	Energy Conservation MeasureCost Effective?Annual Cost Savings (WW)Peak Puel Savings (S)Energy Cost Savings (S)Estimated Install Cost Install Cost (S)Estimated Net Cost (S)Simple Payback Net Cost (S)Simple Payback Payback Payback (S)Simple Payback Payback (S)Simple Payback Payback (S)Simple Payback Payback Payback (S)Simple Payback Payback (S)Simple Payback Payback Payback (S)Simple Payback Payback (S)Simple Payback Payback (S)Simple Payback Payback Payback (S)Simple Payback Payback Payback Payback (S)Simple Payback Payback Payback Payback (S)Simple Payback<

 $^{*}$  - 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).



### WARREN POINT ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO2e Emissions Reduction (Ibs)
Lighting	Upgrades		48,969	15.2	-10	\$8,556	\$29,201	\$6,678	\$22,523	2.6	48,195
ECM 1	Install LED Fixtures	Yes	3,302	0.4	0	\$583	\$5,796	\$600	\$5,196	8.9	3,325
ECM 2	Retrofit Fixtures with LED Lamps	Yes	45,667	14.8	-10	\$7,973	\$23 <i>,</i> 405	\$6,078	\$17,327	2.2	44,870
Lighting	Control Measures		12,540	3.9	-3	\$2,189	\$16,353	\$1,545	\$14,808	6.8	12,320
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	11,420	3.6	-2	\$1,994	\$13,653	\$1,545	\$12,108	6.1	11,220
ECM 4	Install High/Low Lighting Controls	Yes	1,120	0.4	0	\$196	\$2,700	\$0	\$2,700	13.8	1,100
Motor U	pgrades		419	0.1	0	\$74	\$1,753	\$0	\$1,753	23.7	422
ECM 5	Premium Efficiency Motors	No	419	0.1	0	\$74	\$1,753	\$0	\$1,753	23.7	422
Variable	Frequency Drive (VFD) Measures		3,551	1.1	0	\$627	\$6,522	\$320	\$6,202	9.9	3,576
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	3,551	1.1	0	\$627	\$6,522	\$320	\$6,202	9.9	3,576
Electric L	Initary HVAC Measures		1,076	1.3	0	\$190	\$26,218	\$1,091	\$25,127	132.3	1,083
ECM 7	Install High Efficiency Air Conditioning Units	No	1,014	1.3	0	\$179	\$24,949	\$1,022	\$23,927	133.7	1,021
ECM 8	Install High Efficiency Heat Pumps	No	62	0.1	0	\$11	\$1,268	\$69	\$1,199	109.7	62
Gas Heat	ing (HVAC/Process) Replacement		0	0.0	13	<b>\$120</b>	\$6,616	\$800	\$5,816	48.6	1,485
ECM 9	Install High Efficiency Furnaces	No	0	0.0	13	\$120	\$6,616	\$800	\$5,816	48.6	1,485
Domesti	c Water Heating Upgrade		0	0.0	43	\$401	\$402	\$0	\$402	1.0	4,978
ECM 10	Install Low-Flow DHW Devices	Yes	0	0.0	43	\$401	\$402	\$0	\$402	1.0	4,978
Food Ser	vice & Refrigeration Measures		1,612	0.2	0	\$285	\$230	\$50	\$180	0.6	1,623
ECM 11	Vending Machine Control	Yes	1,612	0.2	0	\$285	\$230	\$50	\$180	0.6	1,623
	TOTALS (COST EFFECTIVE MEASURES)		66,672	20.4	30	\$12,058	\$52,707	\$8,593	\$44,114	3.7	70,692
	TOTALS (ALL MEASURES)		68,167	21.9	43	\$12,441	\$87,294	\$10,484	\$76,810	6.2	73,682
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## LYNCREST ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)		Annual Energy Cost Savings (\$)		Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO2e Emissions Reduction (Ibs)
Lighting	Upgrades		35,306	11.6	-7	\$5,960	\$17,427	\$4,160	\$13,267	2.2	34,688
ECM 1	Retrofit Fixtures with LED Lamps	Yes	35,306	11.6	-7	\$5 <i>,</i> 960	\$17,427	\$4,160	\$13,267	2.2	34,688
Lighting	Control Measures		6,296	1.8	-1	\$1,063	\$8,725	\$950	\$7,775	7.3	6,185
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	5,911	1.7	-1	\$998	\$7,600	\$950	\$6,650	6.7	5,808
ECM 3	Install High/Low Lighting Controls	No	384	0.1	0	\$65	\$1,125	\$0	\$1,125	17.4	377
Variable	Frequency Drive (VFD) Measures		2,739	0.3	0	\$468	\$3,812	\$0	\$3,812	8.1	2,758
ECM 4	Install VFDs on Heating Water Pumps	Yes	2,739	0.3	0	\$468	\$3,812	\$0	\$3,812	8.1	2,758
Electric L	Initary HVAC Measures		835	0.9	0	\$143	\$6,893	\$234	\$6,659	46.7	840
ECM 5	Install High Efficiency PTAC/PTHP	No	835	0.9	0	\$143	\$6 <i>,</i> 893	\$234	\$6,659	46.7	840
Gas Heat	ing (HVAC/Process) Replacement		0	0.0	92	\$895	\$60,659	\$5,097	\$55,562	62.1	10,765
ECM 6	Install High Efficiency Hot Water Boilers	No	0	0.0	92	\$895	\$60,659	\$5,097	\$55,562	62.1	10,765
Domesti	c Water Heating Upgrade		0	0.0	19	\$180	\$186	<b>\$</b> 0	\$186	1.0	2,167
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	19	\$180	\$186	\$0	\$186	1.0	2,167
	TOTALS (COST EFFECTIVE MEASURES)		43,956	13.7	10	\$7,605	\$29,026	\$5,110	\$23,916	3.1	45,421
	TOTALS (ALL MEASURES)		45,175	14.7	102	\$8,708	\$97,704	\$10,441	\$87,263	10.0	57,404



## JOHN A. FOREST ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)		Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO₂e Emissions Reduction (Ibs)
Lighting	Upgrades		33,536	12.4	-7	\$5,985	\$19,399	\$5,216	\$14,183	2.4	32,951
ECM 1	Retrofit Fixtures with LED Lamps	Yes	33,536	12.4	-7	\$5 <i>,</i> 985	\$19,399	\$5,216	\$14,183	2.4	32,951
Lighting	Control Measures		8,513	3.1	-2	\$1,519	\$15,250	\$1,405	\$13,845	9.1	8,364
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	7,440	2.7	-2	\$1,328	\$11,650	\$1,405	\$10,245	7.7	7,310
ECM 3	Install High/Low Lighting Controls	Yes	1,073	0.3	0	\$191	\$3,600	\$0	\$3,600	18.8	1,054
Motor U	pgrades		356	0.2	0	\$64	\$1,597	\$0	\$1,597	24.9	358
ECM 4	Premium Efficiency Motors	No	356	0.2	0	\$64	\$1,597	\$0	\$1,597	24.9	358
Domesti	c Water Heating Upgrade		0	0.0	27	\$219	\$201	\$0	\$201	0.9	3,111
ECM 5	Install Low-Flow DHW Devices	Yes	0	0.0	27	\$219	\$201	\$0	\$201	0.9	3,111
	TOTALS (COST EFFECTIVE MEASURES)		42,049	15.4	18	\$7,724	\$34,850	\$6,621	\$28,229	3.7	44,425
	TOTALS (ALL MEASURES)		42,405	15.6	18	\$7,788	\$36,446	\$6,621	\$29,825	3.8	44,784

\* - 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).



# MEMORIAL MIDDLE SCHOOL

#	Energy Conservation Measure	Cost Effecitive?		Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO2e Emissions Reduction (Ibs)
Lighting	Upgrades		62,436	20.4	-13	\$10,734	\$30,319	\$7,537	\$22,782	2.1	61,357
ECM 1	Retrofit Fixtures with LED Lamps	Yes	62,436	20.4	-13	\$10,734	\$30,319	\$7,537	\$22,782	2.1	61,357
Lighting	Control Measures		15,894	5.2	-3	\$2,732	\$22,987	\$2,380	\$20,607	7.5	15,616
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	14,199	4.7	-3	\$2,441	\$18,712	\$2,380	\$16,332	6.7	13,951
ECM 3	Install High/Low Lighting Controls	Yes	1,695	0.5	0	\$291	\$4,275	\$0	\$4,275	14.7	1,665
Variable	Frequency Drive (VFD) Measures		5,925	2.5	0	\$1,030	\$11,726	\$640	\$11,086	10.8	5,967
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	5,925	2.5	0	\$1,030	\$11,726	\$640	\$11,086	10.8	5,967
Electric L	Jnitary HVAC Measures		2,485	2.7	0	\$432	\$16,582	\$782	\$15,800	36.6	2,502
ECM 5	Install High Efficiency Air Conditioning Units	No	2,485	2.7	0	\$432	\$16,582	\$782	\$15,800	36.6	2,502
Gas Heat	ing (HVAC/Process) Replacement		0	0.0	4	\$33	\$1,699	\$400	\$1,299	39.1	425
ECM 6	Install High Efficiency Furnaces	No	0	0.0	4	\$33	\$1,699	\$400	\$1,299	39.1	425
Domesti	c Water Heating Upgrade		0	0.0	65	\$599	\$501	\$0	\$501	0.8	7,647
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	65	\$599	\$501	\$0	\$501	0.8	7,647
	TOTALS (COST EFFECTIVE MEASURES)		84,255	28.1	49	\$15,095	\$65,534	\$10,557	\$54,977	3.6	90,586
	TOTALS (ALL MEASURES)		86,739	30.8	53	\$15,560	\$83,815	\$11,739	\$72,076	4.6	93,513



### THOMAS JEFFERSON MIDDLE SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO <sub>2</sub> e Emissions Reduction (Ibs)
Lighting	Upgrades		103,795	31.8	-21	\$18,682	\$50,338	\$11,746	\$38,592	2.1	102,060
ECM 1	Install LED Fixtures	Yes	10,160	2.6	-1	\$1,834	\$6,140	\$475	\$5 <i>,</i> 665	3.1	10,056
ECM 2	Retrofit Fixtures with LED Lamps	Yes	93,635	29.2	-20	\$16,848	\$44,198	\$11,271	\$32,927	2.0	92,004
Lighting	Control Measures		25,359	7.9	-5	\$4,563	\$36,731	\$3,395	\$33,336	7.3	24,915
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	22,410	7.0	-5	\$4,032	\$30,206	\$3,395	\$26,811	6.6	22,018
ECM 4	Install High/Low Lighting Controls	Yes	2,949	0.9	-1	\$531	\$6,525	\$0	\$6,525	12.3	2,897
Motor U	pgrades		766	0.2	0	\$139	\$2,375	\$0	\$2,375	17.0	771
ECM 5	Premium Efficiency Motors	No	766	0.2	0	\$139	\$2,375	\$0	\$2,375	17.0	771
Variable	Frequency Drive (VFD) Measures		65,236	12.5	0	\$11,867	\$54,058	\$2,990	\$51,068	4.3	65,692
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	16,194	5.3	0	\$2,946	\$23,304	\$1,440	\$21,864	7.4	16,307
ECM 7	Install VFDs on Heating Water Pumps	Yes	39,874	4.2	0	\$7,253	\$22,780	\$0	\$22,780	3.1	40,153
ECM 8	Install Boiler Draft Fan VFDs	Yes	9,168	3.0	0	\$1,668	\$7,974	\$1,550	\$6,424	3.9	9,232
Electric	Jnitary HVAC Measures		4,005	3.7	0	\$729	\$35,028	\$1,788	\$33,240	45.6	4,033
ECM 9	Install High Efficiency Air Conditioning Units	No	4,005	3.7	0	\$729	\$35,028	\$1,788	\$33,240	45.6	4,033
HVAC Sy	stem Improvements		748	0.0	82	\$910	\$11,007	\$0	\$11,007	12.1	10,348
ECM 10	Implement Demand Control Ventilation (DCV)	No	748	0.0	63	\$731	\$10,875	\$0	\$10,875	14.9	8,130
ECM 11	Install Pipe Insulation	Yes	0	0.0	19	\$179	\$132	\$0	\$132	0.7	2,219
Domest	c Water Heating Upgrade		0	0.0	80	\$753	\$301	\$0	\$301	0.4	9,333
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	80	\$753	\$301	\$0	\$301	0.4	9,333
Food Se	rvice & Refrigeration Measures		3,337	0.2	0	\$607	\$5,080	\$200	\$4,880	8.0	3,360
ECM 13	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,049	0.1	0	\$191	\$1,213	\$0	\$1,213	6.4	1,056
ECM 14	Refrigeration Controls	Yes	2,289	0.0	0	\$416	\$3,867	\$200	\$3,667	8.8	2,305
	TOTALS (COST EFFECTIVE MEASURES)		197,727	52.3	72	\$36,651	\$146,640	\$18,331	\$128,309	3.5	207,579
	TOTALS (ALL MEASURES)		203,246	56.3	135	\$38,251	\$194,918	\$20,119	\$174,799	4.6	220,513

# MILNES ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	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)**	CO₂e Emissions Reduction (lbs)
Lighting	Upgrades		49,404	14.4	-10	\$9,200	\$21,411	\$5,753	\$15,658	1.7	48,546
ECM 1	Retrofit Fixtures with LED Lamps	Yes	49,404	14.4	-10	\$9,200	\$21,411	\$5,753	\$15,658	1.7	48,546
Lighting	Control Measures		12,692	3.7	-3	\$2,363	\$16,410	\$1,775	\$14,635	6.2	12,470
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	11,593	3.4	-2	\$2,159	\$14,160	\$1,775	\$12,385	5.7	11,390
ECM 3	Install High/Low Lighting Controls	Yes	1,099	0.3	0	\$205	\$2,250	\$0	\$2,250	11.0	1,079
Variable	Frequency Drive (VFD) Measures		8,776	1.0	0	\$1,651	\$7,974	\$0	\$7,974	4.8	8,838
ECM 4	Install VFDs on Heating Water Pumps	Yes	8,776	1.0	0	\$1,651	\$7,974	\$0	\$7,974	4.8	8,838
Electric L	Jnitary HVAC Measures		283	0.6	0	\$53	\$4,489	\$276	\$4,213	79.1	285
ECM 5	Install High Efficiency Air Conditioning Units	No	283	0.6	0	\$53	\$4,489	\$276	\$4,213	79.1	285
Gas Heat	ing (HVAC/Process) Replacement		0	0.0	150	\$1,348	\$200,757	\$0	\$200,757	148.9	17,599
ECM 6	Install High Efficiency Hot Water Boilers	No	0	0.0	150	\$1,348	\$200,757	\$0	\$200,757	148.9	17,599
Domesti	c Water Heating Upgrade		0	0.0	28	\$255	\$215	\$0	\$215	0.8	3,333
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	28	\$255	\$215	\$0	\$215	0.8	3,333
Food Ser	vice & Refrigeration Measures		1,612	0.2	0	\$303	\$230	\$50	\$180	0.6	1,623
ECM 8	Vending Machine Control	Yes	1,612	0.2	0	\$303	\$230	\$50	\$180	0.6	1,623
	TOTALS (COST EFFECTIVE MEASURES)		72,484	19.3	16	\$13,773	\$46,240	\$7,578	\$38,662	2.8	74,810
	TOTALS (ALL MEASURES)		72,767	19.8	166	\$15,174	\$251,486	\$7,854	\$243,632	16.1	92,694



## RADBURN ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO <sub>2</sub> e Emissions Reduction (Ibs)
Lighting	Upgrades		50,559	17.0	-11	\$9,187	\$26,152	\$6,521	\$19,631	2.1	49,675
ECM 1	Retrofit Fixtures with LED Lamps	Yes	50,559	17.0	-11	\$9,187	\$26,152	\$6,521	\$19,631	2.1	49,675
Lighting	Control Measures		12,557	4.1	-3	\$2,282	\$19,961	\$1,750	\$18,211	8.0	12,337
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	11,417	3.7	-2	\$2,074	\$16,586	\$1,750	\$14,836	7.2	11,217
ECM 3	Install High/Low Lighting Controls	Yes	1,140	0.4	0	\$207	\$3,375	\$0	\$3,375	16.3	1,120
HVAC Sy	stem Improvements		319	0.0	24	\$293	\$8,157	\$0	\$8,157	27.9	3,150
ECM 4	Implement Demand Control Ventilation (DCV)	No	319	0.0	24	\$293	\$8,157	\$0	\$8,157	27.9	3,150
Domesti	c Water Heating Upgrade		0	0.0	39	\$375	\$201	<b>\$0</b>	\$201	0.5	4,523
ECM 5	Install Low-Flow DHW Devices	Yes	0	0.0	39	\$375	\$201	\$0	\$201	0.5	4,523
Food Ser	vice & Refrigeration Measures		3,135	0.2	0	\$576	\$4,865	\$150	\$4,715	8.2	3,156
ECM 6	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,307	0.2	0	\$240	\$1,517	\$0	\$1,517	6.3	1,316
ECM 7	Refrigeration Controls	Yes	1,827	0.1	0	\$336	\$3,348	\$150	\$3,198	9.5	1,840
	TOTALS (COST EFFECTIVE MEASURES)		66,250	21.3	25	\$12,419	\$51,179	\$8,421	\$42,758	3.4	69,691
	TOTALS (ALL MEASURES)		66,570	21.3	50	\$12,712	\$59,335	\$8,421	\$50,914	4.0	72,841



## Westmoreland Elementary School

#	Energy Conservation Measure	Cost Effective?	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)**	CO2e Emissions Reduction (Ibs)
Lighting	Upgrades		33,561	11.1	-7	\$5,998	\$17,067	\$4,628	\$12,439	2.1	32,974
ECM 1	Retrofit Fixtures with LED Lamps	Yes	33,561	11.1	-7	\$5 <i>,</i> 998	\$17,067	\$4,628	\$12,439	2.1	32,974
Lighting Control Measures			9,792	3.1	-2	\$1,750	\$11,439	\$1,205	\$10,234	5.8	9,621
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	8,582	2.8	-2	\$1,534	\$9,414	\$1,205	\$8,209	5.4	8,432
ECM 3	Install High/Low Lighting Controls	Yes	1,210	0.4	0	\$216	\$2,025	\$0	\$2,025	9.4	1,189
Variable Frequency Drive (VFD) Measures			1,337	1.8	0	\$242	\$7,625	\$0	\$7,625	31.6	1,347
ECM 4	Install VFDs on Heating Water Pumps	No	1,337	1.8	0	\$242	\$7,625	\$0	\$7,625	31.6	1,347
HVAC Sy	stem Improvements		6,293	0.0	46	\$1,578	\$4,078	\$0	\$4,078	2.6	11,758
ECM 5	Implement Demand Control Ventilation (DCV)	Yes	6,293	0.0	46	\$1,578	\$4,078	\$0	\$4,078	2.6	11,758
Domesti	c Water Heating Upgrade		0	0.0	145	\$1,383	\$366	\$0	\$366	0.3	17,000
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	145	\$1,383	\$366	\$0	\$366	0.3	17,000
TOTALS (COST EFFECTIVE MEASURES)			49,646	14.2	182	\$10,710	\$32,950	\$5,833	\$27,117	2.5	71,352
TOTALS (ALL MEASURES)			50,983	16.0	182	\$10,952	\$40,575	\$5,833	\$34,742	3.2	72,698

\* - 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).



## FAIR LAWN 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 (\$)		CO2e Emissions Reduction (Ibs)
Lighting	Upgrades		282,169	76.7	-58	\$33,737	\$125,765	\$30,340	\$95,425	2.8	277,350
ECM 1	Install LED Fixtures	Yes	2,913	0.3	0	\$354	\$1,485	\$50	\$1,435	4.1	2,933
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	55	0.0	0	\$7	\$51	\$5	\$46	6.9	54
ECM 3	Retrofit Fixtures with LED Lamps	Yes	279,201	76.3	-58	\$33,377	\$124,229	\$30,285	\$93,944	2.8	274,362
Lighting	Control Measures		83,034	22.4	-17	\$9,926	\$69,312	\$7,050	\$62,262	6.3	81,589
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	71,133	19.8	-15	\$8,503	\$53,937	\$6,780	\$47,157	5.5	69,891
ECM 5	Install Photocells	No	235	0.0	0	\$29	\$750	\$270	\$480	16.8	237
ECM 6	Install High/Low Lighting Controls	Yes	11,666	2.6	-2	\$1,394	\$14,625	\$0	\$14,625	10.5	11,462
Variable	Frequency Drive (VFD) Measures		54,037	15.7	0	\$6,561	\$54,661	\$4,200	\$50,461	7.7	54,415
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	48,889	15.1	0	\$5,936	\$46,893	\$4,200	\$42,693	7.2	49,231
ECM 8	Install VFDs on Heating Water Pumps	No	5,148	0.6	0	\$625	\$7,768	\$0	\$7,768	12.4	5,184
Electric U	Jnitary HVAC Measures		48,624	43.3	0	\$5,904	\$343,431	\$11,379	\$332,052	56.2	48,964
ECM 9	Install High Efficiency Air Conditioning Units	No	48,270	43.2	0	\$5,861	\$341,037	\$11,298	\$329,739	56.3	48,608
ECM 10	Install High Efficiency PTAC/PTHP	No	354	0.1	0	\$43	\$2,394	\$81	\$2,312	53.8	356
Gas Heat	ing (HVAC/Process) Replacement		0	0.0	810	\$7,310	\$512,854	\$3,600	\$509,254	69.7	94,871
ECM 11	Install High Efficiency Steam Boilers	No	0	0.0	632	\$5,698	\$458,884	\$0	\$458,884	80.5	73,954
ECM 12	Install High Efficiency Furnaces	No	0	0.0	179	\$1,612	\$53,970	\$3,600	\$50,370	31.3	20,918
Domesti	c Water Heating Upgrade		0	0.0	379	\$3,416	\$954	\$0	\$954	0.3	44,332
ECM 13	Install Low-Flow DHW Devices	Yes	0	0.0	379	\$3,416	\$954	\$0	\$954	0.3	44,332
Food Ser	vice & Refrigeration Measures		8,059	0.9	0	\$979	\$1,150	\$250	\$900	0.9	8,116
ECM 14	Vending Machine Control	Yes	8,059	0.9	0	\$979	\$1,150	\$250	\$900	0.9	8,116
TOTALS (COST EFFECTIVE MEASURES)			421,916	115.0	303	\$53,965	\$243,323	\$41,570	\$201,753	3.7	460,380
TOTALS (ALL MEASURES)		475,923	158.9	1,114	\$67,833	\$1,108,126	\$56,819	\$1,051,306	15.5	609,637	

# THOMAS EDISON SCHOOL

#	Energy Conservation Measure	Cost Effective?	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)**	CO2e Emissions Reduction (Ibs)
Lighting	Upgrades		53,767	11.9	-11	\$8,971	\$18,695	\$5,009	\$13,686	1.5	52,830
ECM 1	Retrofit Fixtures with LED Lamps	Yes	53,767	11.9	-11	\$8,971	\$18,695	\$5,009	\$13,686	1.5	52,830
Lighting	Control Measures		14,114	3.1	-3	\$2,355	\$17,981	\$1,595	\$16,386	7.0	13,867
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	13,389	2.9	-3	\$2,234	\$16,856	\$1,595	\$15,261	6.8	13,155
ECM 3	Install High/Low Lighting Controls	Yes	725	0.2	0	\$121	\$1,125	\$0	\$1,125	9.3	713
HVAC System Improvements			0	0.0	2	<b>\$20</b>	\$43	\$0	\$43	2.2	236
ECM 4	Install Pipe Insulation	Yes	0	0.0	2	\$20	\$43	\$0	\$43	2.2	236
Domestic Water Heating Upgrade			0	0.0	32	\$310	\$201	<b>\$</b> 0	\$201	0.6	3,733
ECM 5	Install Low-Flow DHW Devices	Yes	0	0.0	32	\$310	\$201	\$0	\$201	0.6	3,733
Food Ser	vice & Refrigeration Measures		1,954	0.2	0	\$330	\$460	\$50	\$410	1.2	1,968
ECM 6	Vending Machine Control	Yes	1,954	0.2	0	\$330	\$460	\$50	\$410	1.2	1,968
TOTALS (COST EFFECTIVE MEASURES)			69 <i>,</i> 836	15.2	20	\$11,985	\$37,381	\$6,654	\$30,727	2.6	72,634
TOTALS (ALL MEASURES)			69,836	15.2	20	\$11,985	\$37,381	\$6,654	\$30,727	2.6	72,634

\* - 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

	Warren Point	Lyncrest	Memorial	Jefferson	Milnes	Rad burn	Westmore land	High School	Thomas Edison
Potential:	HIGH	Medium	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
System Potential: (kW)	100	65	140	195	92	70	104	497	80
Electric Generation: (kWh per year)	119,137	77,439	166,792	232,317	109,60 6	83,39 6	123,903	592,111	95,310
Displaced Cost: (per year)	\$21,040	\$13,230	\$28,990	\$42,260	\$20,62 0	\$15,3 20	\$22,390	\$71,890	\$16,090

SREC Registration Program (SRP):

http://www.NJCleanEnergy.com/SREC

Community Solar Energy Pilot Program:

http://www.NJCleanEnergy.com/Com munitySolar



### 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

INCENTIVE PROGRAMS

**OTHER PROGRAMS** 



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

#### 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

#### Renewable Energy Generation:

- SREC Registration Program (SRP)
- Community Solar

### RECOMMENDED NJCEP INCENTIVES PER BUILDING

Fair Lawn BOE	Direct Install	SmartStart	СТЕЕР
Buildings & Grounds Building	Х	Х	Х
Warren Point Elementary School	Х	Х	Х
Lyncrest Elementary School	Х	Х	Х
John A. Forest Elementary School	Х	Х	Х
Memorial Middle School	Х	Х	Х
Thomas Jefferson Middle School	Х	Х	Х
Milnes Elementary School	Х	Х	Х
Radburn Elementary School	Х	Х	Х
Westmoreland Elementary School	Х	Х	Х
Fair Lawn High School*		Х	Х
Thomas Edison School	Х	Х	Х



### DIRECT INSTALL

#### NJCleanEnergy.com/DI

What is DI:Turn-key retrofit program to replace outdated<br/>and inefficient equipment, including lighting,<br/>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 Public Schools)



### DIRECT INSTALL

NJCleanEnergy.com/DI

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

INCENTIVE FUNDING	CUSTOMER
Up to <b>80%</b> of installed cost is paid directly to the contractor	20% of installed cost
All other eligible facilities:	
INCENTIVE FUNDING	CUSTOMER
Up to <b>70%</b> of installed cost is paid directly to the contractor	30% of installed cost





### **Participating Contractor**

Lime Energy Chris Fornicola 732-427-7278 chris.fornicola@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 <u>all</u> 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



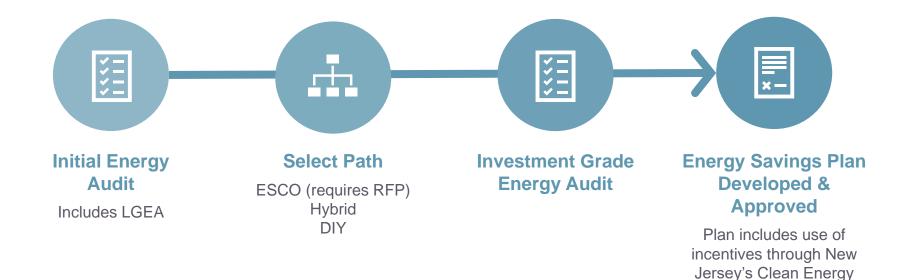
## FINANCING MECHANISM: ESIP

### **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





Program

### ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

### **FOR MORE INFORMATION**

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## FOR MORE INFORMATION

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## QUESTIONS



