

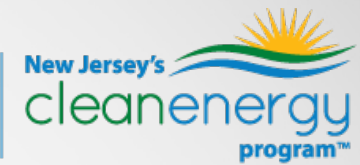
New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Montvale School District

Alex Klieverik, TRC

June 26, 2018

Introductions

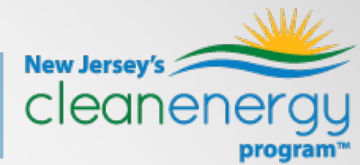


- *Montvale School District*
 - Andrea Wasserman – Business Administrator
 - Brian Marshall – Maintenance Coordinator
 - Dr. Darren Petersen – Superintendent
- *NJ Clean Energy Program – TRC*
 - Brian DeLuca – Program Manager
 - Alex Klieverik – Auditor
 - Sarah Walters – LG&EA Account Manager

Agenda

- 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 Montvale School District

Process to Draft Report



- Application submitted to NJCEP
- Site Visit Performed
- Utility Analysis
- Baseline Condition
- Analysis
- Recommendations
- Report

Site Visit and Utility Analysis

Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems

Entities Visited/Analyzed

- Fieldstone Middle School
- Memorial Elementary School

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Fieldstone 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			94,626	23.7	0.0	\$13,484.79	\$76,270.14	\$10,655.00	\$65,615.14	4.9	95,288
ECM 1	Install LED Fixtures	Yes	4,051	0.5	0.0	\$577.30	\$3,125.42	\$800.00	\$2,325.42	4.0	4,079
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	33,604	9.1	0.0	\$4,788.73	\$31,796.67	\$2,680.00	\$29,116.67	6.1	33,839
ECM 3	Retrofit Fixtures with LED Lamps	Yes	56,674	14.0	0.0	\$8,076.32	\$41,240.51	\$7,175.00	\$34,065.51	4.2	57,070
ECM 4	Install LED Exit Signs	Yes	298	0.0	0.0	\$42.44	\$107.56	\$0.00	\$107.56	2.5	300
Lighting Control Measures			21,899	5.5	0.0	\$3,120.79	\$34,988.00	\$3,860.00	\$31,128.00	10.0	22,052
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	19,371	5.0	0.0	\$2,760.45	\$31,988.00	\$3,860.00	\$28,128.00	10.2	19,506
ECM 6	Install High/Low Lighting Controls	Yes	2,529	0.5	0.0	\$360.34	\$3,000.00	\$0.00	\$3,000.00	8.3	2,546
Motor Upgrades			458	0.1	0.0	\$65.23	\$3,134.10	\$0.00	\$3,134.10	48.0	461
	Premium Efficiency Motors	No	458	0.1	0.0	\$65.23	\$3,134.10	\$0.00	\$3,134.10	48.0	461
Variable Frequency Drive (VFD) Measures			12,000	1.2	0.0	\$1,710.09	\$7,615.90	\$0.00	\$7,615.90	4.5	12,084
ECM 7	Install VFDs on Hot Water Pumps	Yes	12,000	1.2	0.0	\$1,710.09	\$7,615.90	\$0.00	\$7,615.90	4.5	12,084
Electric Unitary HVAC Measures			14,568	9.4	0.0	\$2,076.01	\$33,779.36	\$780.16	\$32,999.20	15.9	14,670
	Install High Efficiency Electric AC	No	4,369	2.6	0.0	\$622.54	\$20,700.36	\$268.64	\$20,431.72	32.8	4,399
ECM 8	Install High Efficiency Heat Pumps	Yes	10,199	6.8	0.0	\$1,453.47	\$13,079.00	\$511.52	\$12,567.48	8.6	10,271
Gas Heating (HVAC/Process) Replacement			0	0.0	177.8	\$1,465.03	\$148,106.45	\$800.00	\$147,306.45	100.5	20,821
	Install High Efficiency Hot Water Boilers	No	0	0.0	165.1	\$1,359.82	\$142,668.69	\$0.00	\$142,668.69	104.9	19,325
	Install High Efficiency Furnaces	No	0	0.0	12.8	\$105.21	\$5,437.76	\$800.00	\$4,637.76	44.1	1,495
TOTALS FOR HIGH PRIORITY MEASURES			138,725	37.2	0.0	\$19,769.14	\$131,953.05	\$15,026.52	\$116,926.53	5.9	139,695
TOTALS FOR ALL EVALUATED MEASURES			143,551	39.9	177.8	\$21,921.94	\$303,893.96	\$16,095.16	\$287,798.80	13.1	165,376

* - 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).

Memorial Elementary School

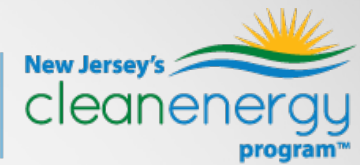


Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			153,678	32.1	0.0	\$21,915.25	\$121,769.61	\$17,380.00	\$104,389.61	4.8	154,753
ECM 1	Install LED Fixtures	Yes	17,837	2.6	0.0	\$2,543.71	\$38,230.78	\$4,550.00	\$33,680.78	13.2	17,962
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	55,405	11.8	0.0	\$7,900.96	\$29,593.50	\$3,515.00	\$26,078.50	3.3	55,792
ECM 3	Retrofit Fixtures with LED Lamps	Yes	80,436	17.7	0.0	\$11,470.59	\$53,945.33	\$9,315.00	\$44,630.33	3.9	80,999
Lighting Control Measures			32,379	7.0	0.0	\$4,617.45	\$41,792.00	\$4,640.00	\$37,152.00	8.0	32,606
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	28,345	6.2	0.0	\$4,042.20	\$37,592.00	\$4,640.00	\$32,952.00	8.2	28,544
ECM 5	Install High/Low Lighting Controls	Yes	4,034	0.8	0.0	\$575.25	\$4,200.00	\$0.00	\$4,200.00	7.3	4,062
Motor Upgrades			1,051	0.3	0.0	\$149.94	\$5,645.09	\$0.00	\$5,645.09	37.6	1,059
	Premium Efficiency Motors	No	1,051	0.3	0.0	\$149.94	\$5,645.09	\$0.00	\$5,645.09	37.6	1,059
Variable Frequency Drive (VFD) Measures			19,072	3.6	0.0	\$2,719.72	\$19,030.22	\$1,200.00	\$17,830.22	6.6	19,205
ECM 6	Install VFDs on Constant Volume (CV) HVAC	Yes	6,029	2.0	0.0	\$859.83	\$7,213.60	\$1,200.00	\$6,013.60	7.0	6,072
ECM 7	Install VFDs on Hot Water Pumps	Yes	13,042	1.6	0.0	\$1,859.89	\$11,816.62	\$0.00	\$11,816.62	6.4	13,133
Gas Heating (HVAC/Process) Replacement			0	0.0	36.2	\$317.86	\$11,328.67	\$800.00	\$10,528.67	33.1	4,243
	Install High Efficiency Furnaces	No	0	0.0	36.2	\$317.86	\$11,328.67	\$800.00	\$10,528.67	33.1	4,243
TOTALS FOR HIGH PRIORITY MEASURES			205,129	42.8	0.0	\$29,252.42	\$182,591.84	\$23,220.00	\$159,371.84	5.4	206,563
TOTALS FOR ALL EVALUATED MEASURES			206,181	43.1	36.2	\$29,720.22	\$199,565.59	\$24,020.00	\$175,545.59	5.9	211,865

* - 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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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

PROGRAMS

Equipment Rebates:

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

Whole Buildings:

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

Energy Generation:

- Combined Heat and Power (CHP)

* eligible programs are highlighted in yellow

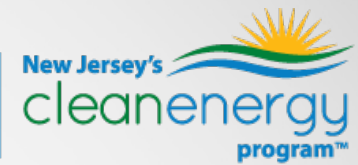
SmartStart: Overview

- Two types of incentives for high efficiency equipment installation:
 - Prescriptive
 - Custom
- Project pre-approval required for certain equipment
- Incentives up to \$500,000 per electric account & \$500,000 per natural gas account
- Project Categories:
 - New Construction
 - Renovation
 - Remodeling
 - Equipment Replacement
- 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 a peak 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 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

Lime Energy

Tony McCoy

855-600-5463

njdi@lime-energy.com

Recommended NJCEP Incentives per Building

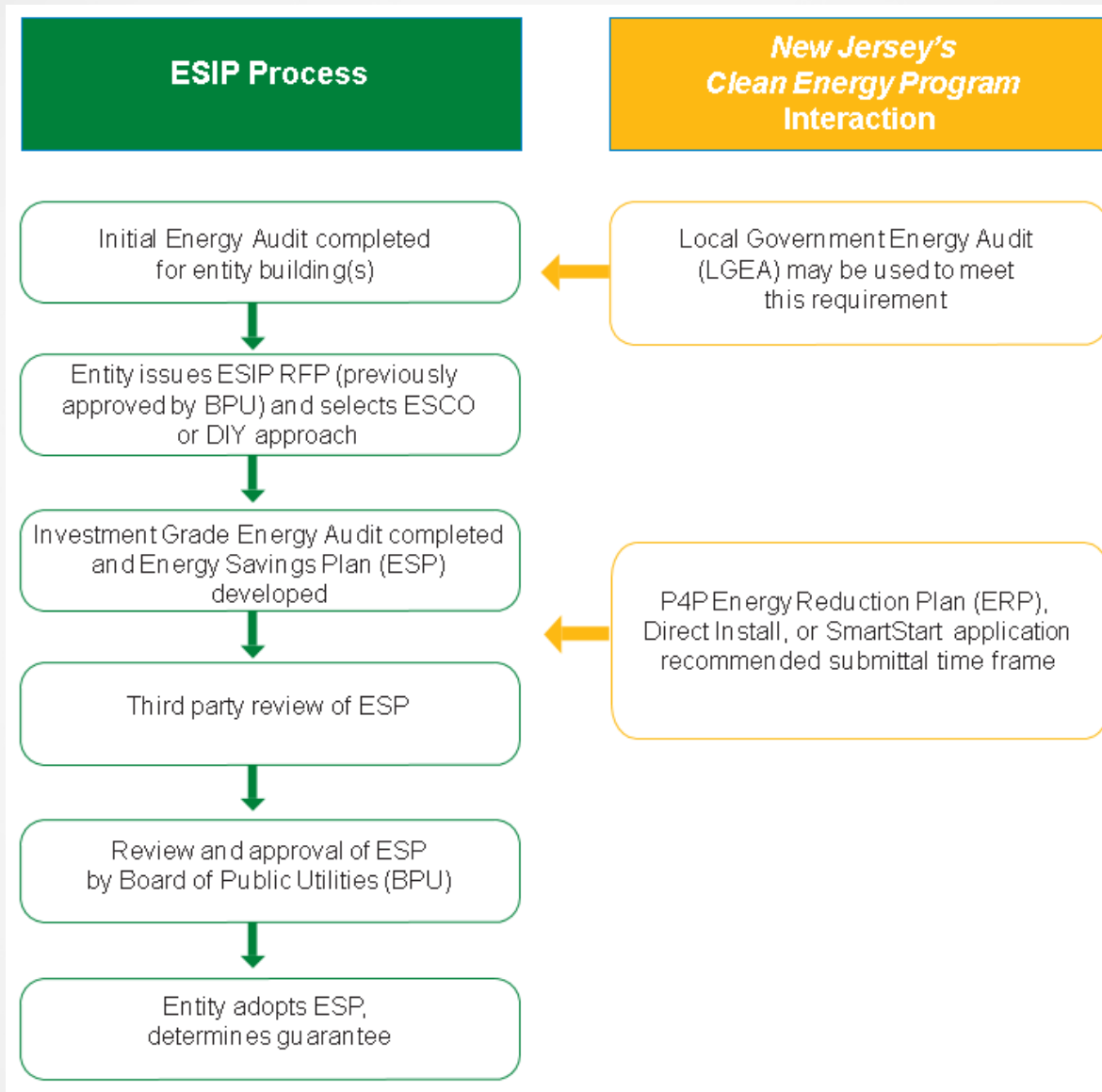


Montvale School District	SmartStart Prescriptive	SmartStart Custom	Direct Install	Pay For Performance Existing Buildings	Large Energy Users	Combined Heat & Power
Fieldstone Elementary School	X		X			
Memorial Elementary School	X		X			

Energy Savings Improvement Program (ESIP)



- Program administered directly by BPU
- 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 or require voter approval.
- Requires an audit as 1st step (LGEA satisfied this requirement)





FOR MORE INFORMATION

ESIP

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Questions



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FOR MORE INFORMATION

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