



New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Wildwood City Board of Education

Ignacio Badilla, TRC

December 1st, 2017

Meeting Setup



1) Dial the following:

1-877-304-9323

2) When prompted, enter the code below:

3587465#

Introductions



- Wildwood City Board of Education
 - Martha J. Jamison, B.A.
 - J. Kummings
 - John J. Veisz, AIA, CSDA
- NJ Clean Energy Program – TRC
 - Auditor: Ignacio Badilla
 - Case Manager: Amanda Muench
 - Outreach Manager: Jim Friedl

Agenda



- Overview of LGEA process (application to deliverable)
- 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 Wildwood City Board of Education

Process to Draft Report



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

Glenwood Avenue Elementary School



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

Glenwood Avenue 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			94,538	12.4	0.0	\$14,232.61	\$54,480.15	\$6,040.00	\$48,440.15	3.4	95,199
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	90,808	12.1	0.0	\$13,671.07	\$52,383.00	\$6,005.00	\$46,378.00	3.4	91,443
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,796	0.2	0.0	\$270.35	\$376.27	\$35.00	\$341.27	1.3	1,808
ECM 3	Install LED Exit Signs	Yes	1,934	0.1	0.0	\$291.19	\$1,720.88	\$0.00	\$1,720.88	5.9	1,948
Lighting Control Measures			24,379	3.2	0.0	\$3,670.28	\$9,180.00	\$1,190.00	\$7,990.00	2.2	24,550
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	24,379	3.2	0.0	\$3,670.28	\$9,180.00	\$1,190.00	\$7,990.00	2.2	24,550
Electric Unitary HVAC Measures			41,345	13.7	0.0	\$6,224.48	\$304,116.96	\$10,304.00	\$293,812.96	47.2	41,634
	Install High Efficiency Heat Pumps	No	41,345	13.7	0.0	\$6,224.48	\$304,116.96	\$10,304.00	\$293,812.96	47.2	41,634
Domestic Water Heating Upgrade			13,907	0.0	0.0	\$2,093.65	\$6,000.00	\$0.00	\$6,000.00	2.9	14,004
ECM 5	Install High Efficiency Heat Pump Water Heater	Yes	13,907	0	0	\$ 2,093.65	\$ 6,000.00	0	\$ 6,000.00	3	14,004
Plug Load Equipment Control - Vending Machine			1,954	0.0	0.0	\$294.23	\$460.00	\$0.00	\$460.00	1.6	1,968
ECM 6	Vending Machine Control	Yes	1,954	0.0	0.0	\$294.23	\$460.00	\$0.00	\$460.00	1.6	1,968
TOTALS			134,779	29.4	0.0	\$26,515.24	\$374,237.11	\$17,534.00	\$356,703.11	13.5	135,721

* - 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).

Wildwood Middle School/High School



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
- ?

Wildwood Middle School/High School



Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual N/A Savings (MMBtu)	Annual N/A 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			346,291	42.6	0.0	0.0	0.0	0.0	\$5,126,083	\$256,070.73	\$23,305.00	\$232,765.73	4.5	348,712
ECM 1	Install LED Fixtures	Yes	60,226	7.4	0.0	0.0	0.0	0.0	\$8,915.15	\$108,580.03	\$6,300.00	\$102,280.03	11.5	60,647
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	228,277	28.1	0.0	0.0	0.0	0.0	\$33,791.47	\$139,065.83	\$16,265.00	\$122,800.83	3.6	229,873
ECM 3	Retrofit Fixtures with LED Lamps	Yes	57,304	7.1	0.0	0.0	0.0	0.0	\$8,482.63	\$7,994.64	\$740.00	\$7,254.64	0.9	57,705
ECM 4	Install LED Exit Signs	Yes	484	0.0	0.0	0.0	0.0	0.0	\$71.58	\$430.22	\$0.00	\$430.22	6.0	487
Lighting Control Measures			59,989	7.4	0.0	0.0	0.0	0.0	\$8,880.05	\$35,640.00	\$4,620.00	\$31,020.00	3.5	60,408
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	59,989	7.4	0.0	0.0	0.0	0.0	\$8,880.05	\$35,640.00	\$4,620.00	\$31,020.00	3.5	60,408
Motor Upgrades			2,199	0.6	0.0	0.0	0.0	0.0	\$325.45	\$3,997.38	\$0.00	\$3,997.38	12.3	2,214
ECM 6	Premium Efficiency Motors	Yes	2,199	0.6	0.0	0.0	0.0	0.0	\$325.45	\$3,997.38	\$0.00	\$3,997.38	12.3	2,214
Gas Heating (HVAC/Process) Replacement			0	0.0	237.7	0.0	0.0	237.7	\$2,259.42	\$94,952.87	\$4,512.00	\$90,440.87	40.0	27,828
	Install High Efficiency Steam Boilers	No	0	0.0	237.7	0.0	0.0	237.7	\$2,259.42	\$94,952.87	\$4,512.00	\$90,440.87	40.0	27,828
HVAC System Improvements			1,287	0.0	0.0	0.0	0.0	0.0	\$190.50	\$1,649.35	\$0.00	\$1,649.35	8.7	1,296
ECM 7	Install Programmable Thermostats	Yes	1,287	0.0	0.0	0.0	0.0	0.0	\$190.50	\$1,649.35	\$0.00	\$1,649.35	8.7	1,296
Domestic Water Heating Upgrade			0	0.0	108.3	0.0	0.0	108.3	\$1,029.80	\$11,543.23	\$398.00	\$11,145.23	10.8	12,683
ECM 8	Install High Efficiency Gas Water Heater	Yes	0	0.0	97.8	0.0	0.0	97.8	\$929.74	\$11,500.21	\$398.00	\$11,102.21	11.9	11,451
ECM 9	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	10.5	0.0	0.0	10.5	\$100.06	\$43.02	\$0.00	\$43.02	0.4	1,232
Food Service Equipment & Refrigeration Measures			3,695	0.2	0.0	0.0	0.0	0.0	\$547.00	\$2,250.41	\$100.00	\$2,150.41	3.9	3,721
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,919	0.2	0.0	0.0	0.0	0.0	\$284.00	\$1,213.20	\$0.00	\$1,213.20	4.3	1,932
ECM 11	Refrigeration Controls	Yes	1,777	0.0	0.0	0.0	0.0	0.0	\$263.00	\$1,037.21	\$100.00	\$937.21	3.6	1,789
Plug Load Equipment Control - Vending Machine			3,566	0.0	0.0	0.0	0.0	0.0	\$527.90	\$690.00	\$0.00	\$690.00	1.3	3,591
ECM 12	Vending Machine Control	Yes	3,566	0.0	0.0	0.0	0.0	0.0	\$527.90	\$690.00	\$0.00	\$690.00	1.3	3,591
TOTALS			417,027	50.8	346.0	0.0	0.0	346.0	\$65,020.95	\$406,793.96	\$32,935.00	\$373,858.96	5.7	460,454



Some Energy Efficient 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

PROGRAM PORTFOLIO



ELIGIBLE SECTORS

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

PROGRAMS

Equipment Rebates:

- Retrofit – Existing Buildings
- New Construction
- Direct Install – Small Business
- Large Energy Users

Whole Buildings:

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

Energy Generation:

- Combined Heat and Power (CHP) and Fuel Cells

Recommended NJCEP Incentives



- Direct Install

Hutchinson Mechanical Services

Ed Hutchinson

856-429-5828 x215

edhutchinson@hutchbiz.com

- Pay for Performance (P4P)

- SmartStart Buildings (i.e Retrofit – Existing Buildings)

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

Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

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