

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Rumson Board of Education

Moussa Traore, TRC

November 7, 2017

Introductions



- *Rumson Board of Education*

- Supervisor of B & G: Jamie O'Brien
- Business Administrator: Debra Allen
- Superintendent: John Bormann

- *NJ Clean Energy Program – TRC*

- Auditor: Moussa Traore
- 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 Rumson Board of Education

Process to Draft Report



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

(1) Forrestdale School



Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- On Site Generation - Photovoltaic

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

(1) Forrestdale 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			124,185	31.8	0.0	\$15,170.53	\$91,573.20	\$16,600.00	\$74,973.20	4.9	125,054
ECM 1	Install LED Fixtures	Yes	11,509	5.2	0.0	\$1,405.90	\$21,095.77	\$4,600.00	\$16,495.77	11.7	11,589
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	543	0.1	0.0	\$66.38	\$588.00	\$30.00	\$558.00	8.4	547
ECM 3	Retrofit Fixtures with LED Lamps	Yes	111,045	26.4	0.0	\$13,565.34	\$67,953.44	\$11,970.00	\$55,983.44	4.1	111,822
ECM 4	Install LED Exit Signs	Yes	1,088	0.1	0.0	\$132.91	\$1,935.99	\$0.00	\$1,935.99	14.6	1,096
Lighting Control Measures			25,272	5.8	0.0	\$3,087.25	\$8,816.00	\$1,180.00	\$7,636.00	2.5	25,449
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	21,550	4.9	0.0	\$2,632.50	\$8,004.00	\$1,180.00	\$6,824.00	2.6	21,700
ECM 6	Install High/Low Lighting Controls	Yes	3,723	0.8	0.0	\$454.75	\$812.00	\$0.00	\$812.00	1.8	3,749
Variable Frequency Drive (VFD) Measures			11,842	3.9	0.0	\$1,446.59	\$11,423.85	\$0.00	\$11,423.85	7.9	11,925
ECM 7	Install VFDs on Hot Water Pumps	Yes	11,842	3.9	0.0	\$1,446.59	\$11,423.85	\$0.00	\$11,423.85	7.9	11,925
Electric Unitary HVAC Measures			73,572	43.6	0.0	\$8,987.60	\$201,112.01	\$6,161.50	\$194,950.51	21.7	74,087
	Install High Efficiency Electric AC	No	73,572	43.6	0.0	\$8,987.60	\$201,112.01	\$6,161.50	\$194,950.51	21.7	74,087
Gas Heating (HVAC/Process) Replacement			0	0.0	565.7	\$5,896.19	\$159,952.78	\$17,252.00	\$142,700.78	24.2	66,242
	Install High Efficiency Hot Water Boilers	No	0	0.0	539.8	\$5,625.79	\$145,633.35	\$15,652.00	\$129,981.35	23.1	63,204
	Install High Efficiency Furnaces	No	0	0.0	25.9	\$270.40	\$14,319.43	\$1,600.00	\$12,719.43	47.0	3,038
HVAC System Improvements			17,196	3.9	0.0	\$2,100.68	\$4,300.00	\$1,500.00	\$2,800.00	1.3	17,316
ECM 8	Install Dual Enthalpy Outside Economizer Control	Yes	17,196	3.9	0.0	\$2,100.68	\$4,300.00	\$1,500.00	\$2,800.00	1.3	17,316
Domestic Water Heating Upgrade			0	0.0	33.7	\$351.60	\$172.08	\$0.00	\$172.08	0.5	3,950
ECM 9	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	33.7	\$351.60	\$172.08	\$0.00	\$172.08	0.5	3,950
Plug Load Equipment Control - Vending Machine			3,224	0.0	0.0	\$393.81	\$460.00	\$0.00	\$460.00	1.2	3,246
ECM 10	Vending Machine Control	Yes	3,224	0.0	0.0	\$393.81	\$460.00	\$0.00	\$460.00	1.2	3,246
TOTALS (RECOMMENDED MEASURES)			181,719	45.4	33.7	\$22,550.45	\$116,745.13	\$19,280.00	\$97,465.13	4.3	186,940
TOTALS (EVALUATED MEASURES)			255,291	89.0	599.5	\$37,434.24	\$477,809.93	\$42,693.50	\$435,116.43	11.6	327,268

* - 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).

(2) Deane-Porter School



Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- On Site Generation - Photovoltaic

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

(2) Deane-Porter 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			76,522	19.3	0.0	\$9,476.52	\$61,614.28	\$7,155.00	\$54,459.28	5.7	77,057
ECM 1	Install LED Fixtures	Yes	4,548	2.1	0.0	\$563.26	\$7,813.54	\$2,000.00	\$5,813.54	10.3	4,580
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	5,434	1.2	0.0	\$672.92	\$5,880.00	\$300.00	\$5,580.00	8.3	5,472
ECM 3	Retrofit Fixtures with LED Lamps	Yes	65,512	15.9	0.0	\$8,113.09	\$46,092.31	\$4,855.00	\$41,237.31	5.1	65,970
ECM 4	Install LED Exit Signs	Yes	1,028	0.1	0.0	\$127.25	\$1,828.44	\$0.00	\$1,828.44	14.4	1,035
Lighting Control Measures			18,634	4.2	0.0	\$2,307.69	\$7,191.00	\$1,000.00	\$6,191.00	2.7	18,765
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	16,041	3.7	0.0	\$1,986.55	\$6,031.00	\$960.00	\$5,071.00	2.6	16,153
ECM 6	Install High/Low Lighting Controls	Yes	2,593	0.6	0.0	\$321.13	\$1,160.00	\$40.00	\$1,120.00	3.5	2,611
Motor Upgrades			665	0.1	0.0	\$82.34	\$2,262.88	\$0.00	\$2,262.88	27.5	670
ECM 7	Premium Efficiency Motors	Yes	665	0.1	0.0	\$82.34	\$2,262.88	\$0.00	\$2,262.88	27.5	670
Variable Frequency Drive (VFD) Measures			18,139	1.9	0.0	\$2,246.31	\$7,213.60	\$0.00	\$7,213.60	3.2	18,266
ECM 8	Install VFDs on Hot Water Pumps	Yes	18,139	1.9	0.0	\$2,246.31	\$7,213.60	\$0.00	\$7,213.60	3.2	18,266
Electric Unitary HVAC Measures			25,716	15.2	0.0	\$3,184.64	\$71,312.32	\$4,300.00	\$67,012.32	21.0	25,895
	Install High Efficiency Electric AC	No	25,716	15.2	0.0	\$3,184.64	\$71,312.32	\$4,300.00	\$67,012.32	21.0	25,895
Gas Heating (HVAC/Process) Replacement			0	0.0	330.7	\$3,404.17	\$112,211.74	\$12,060.00	\$100,151.74	29.4	38,718
	Install High Efficiency Hot Water Boilers	No	0	0.0	330.7	\$3,404.17	\$112,211.74	\$12,060.00	\$100,151.74	29.4	38,718
Domestic Water Heating Upgrade			0	0.0	2.8	\$28.94	\$21.51	\$0.00	\$21.51	0.7	329
ECM 9	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	2.8	\$28.94	\$21.51	\$0.00	\$21.51	0.7	329
TOTAL (RECOMMENDED MEASURES)			113,960	25.5	2.8	\$14,141.79	\$78,303.27	\$8,155.00	\$70,148.27	5.0	115,086
TOTALS (ALL EVALUATED MEASURES)			139,675	40.8	333.5	\$20,730.60	\$261,827.34	\$24,515.00	\$237,312.34	11.4	179,699

* - 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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Some 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
- 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

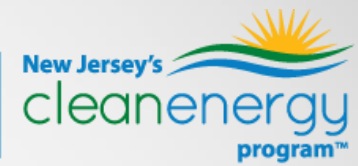
Whole Buildings:

- 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)



- 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 requirement)

Direct Install – Financing Option

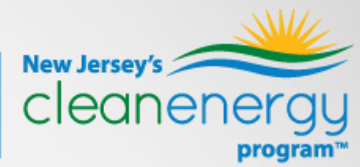


New Jersey Natural Gas

NJNG customers can finance up to 30 percent of the remaining balance at 0% APR through the **SAVEGREEN Project**® On-Bill Repayment Program (OBRP).



Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

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