



New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Brooklawn Board of Education

Smruti Srinivasan, TRC

February 7, 2018

Introductions



Brooklawn Board of Education

- Facilities Manager: Bud Rutter
- Superintendent: Sam Rosetti

NJ Clean Energy Program – TRC & BPU

- Auditor: Smruti Srinivasan
- Outreach Manager: Jim Friedl
- ESIP Coordinator / BPU: Mike Thulen

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 Brooklawn Board of Education

Process to Draft Report



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

(1) Alice Costello 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

(1) Alice Costello School



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		40,328	15.3	0.0	\$6,450.23	\$44,039.53	\$7,125.00	\$36,914.53	5.7	40,610
ECM 1	Install LED Fixtures	4,859	1.7	0.0	\$777.16	\$7,032.19	\$1,800.00	\$5,232.19	6.7	4,893
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	104	0.0	0.0	\$16.71	\$83.43	\$0.00	\$83.43	5.0	105
ECM 3	Retrofit Fixtures with LED Lamps	35,365	13.5	0.0	\$5,656.36	\$36,923.91	\$5,325.00	\$31,598.91	5.6	35,612
Lighting Control Measures		4,612	1.8	0.0	\$737.65	\$7,292.00	\$980.00	\$6,312.00	8.6	4,644
ECM 4	Install Occupancy Sensor Lighting Controls	4,612	1.8	0.0	\$737.65	\$7,292.00	\$980.00	\$6,312.00	8.6	4,644
Variable Frequency Drive (VFD) Measures		2,471	0.8	0.0	\$395.23	\$6,015.30	\$480.00	\$5,535.30	14.0	2,488
ECM 5	Install VFDs on Constant Volume (CV) HVAC	2,471	0.8	0.0	\$395.23	\$6,015.30	\$480.00	\$5,535.30	14.0	2,488
Electric Unitary HVAC Measures		3,379	2.7	0.0	\$540.43	\$33,233.53	\$1,623.00	\$31,610.53	58.5	3,402
	Install High Efficiency Electric AC	3,379	2.7	0.0	\$540.43	\$33,233.53	\$1,623.00	\$31,610.53	58.5	3,402
HVAC System Improvements		5,360	1.2	0.0	\$857.28	\$1,650.00	\$500.00	\$1,150.00	1.3	5,397
ECM 6	Install Dual Enthalpy Outside Economizer Control	5,360	1.2	0.0	\$857.28	\$1,650.00	\$500.00	\$1,150.00	1.3	5,397
Domestic Water Heating Upgrade		8,136	0.5	-17.9	\$1,176.72	\$15,999.80	\$550.00	\$15,449.80	13.1	6,103
ECM 7	Install High Efficiency Gas Water Heater	6,000	0.5	-20.3	\$809.60	\$15,892.25	\$550.00	\$15,342.25	19.0	3,662
ECM 8	Install Low-Flow Domestic Hot Water Devices	2,136	0.0	2.5	\$367.12	\$107.55	\$0.00	\$107.55	0.3	2,441
Plug Load Equipment Control - Vending Machine		1,612	0.0	0.0	\$257.80	\$230.00	\$0.00	\$230.00	0.9	1,623
ECM 9	Vending Machine Control	1,612	0.0	0.0	\$257.80	\$230.00	\$0.00	\$230.00	0.9	1,623
TOTAL OF ALL EVALUATED ECMS		65,898	22.2	-17.9	\$10,415.34	\$108,460.15	\$11,258.00	\$97,202.15	9.3	64,268
TOTAL OF ALL RECOMMENDED ECMS		62,519	19	-18	\$ 9,874.91	\$ 75,226.63	\$ 9,635.00	\$ 65,591.63	6.6	60,866

(2) Board of Education Offices



Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
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(2) Board of Education Offices



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		3,476	1.6	0.0	\$652.82	\$4,644.83	\$0.00	\$4,644.83	7.1	3,500
ECM 1	Install LED Fixtures	505	0.4	0.0	\$94.78	\$1,709.24	\$0.00	\$1,709.24	18.0	508
ECM 2	Retrofit Fixtures with LED Lamps	2,971	1.3	0.0	\$558.05	\$2,935.59	\$0.00	\$2,935.59	5.3	2,992
Electric Unitary HVAC Measures		600	1.1	0.0	\$112.68	\$7,481.10	\$0.00	\$7,481.10	66.4	604
	Install High Efficiency Electric AC	600	1.1	0.0	\$112.68	\$7,481.10	\$0.00	\$7,481.10	66.4	604
Gas Heating (HVAC/Process) Replacement		0	0.0	25.9	\$179.56	\$3,172.03	\$0.00	\$3,172.03	17.7	3,028
ECM 3	Install High Efficiency Furnaces	0	0.0	25.9	\$179.56	\$3,172.03	\$0.00	\$3,172.03	17.7	3,028
Domestic Water Heating Upgrade		0	0.0	0.8	\$5.49	\$2,461.20	\$0.00	\$2,461.20	447.9	93
	Install High Efficiency Gas Water Heater	0	0.0	0.8	\$5.49	\$2,461.20	\$0.00	\$2,461.20	447.9	93
TOTALS OF ALL ECMS		4,076	2.8	26.7	\$950.57	\$17,759.16	\$0.00	\$17,759.16	18.7	7,225
TOTALS OF RECOMMENDED ECMS		3,476	1.6	25.9	\$832.39	\$7,816.86	\$0.00	\$7,816.86	9.4	6,529
TOTAL OF NON-RECOMMENDED ECMS		600	1	1	\$ 118.18	\$ 9,942.30	\$ -	\$ 9,942.30	84.1	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).



Some Energy Efficient Best Practices

- Reduce Air Leakage
- Close Doors and Windows
- Use Window Treatments/Coverings
- Clean and/or Replace HVAC filters
- Check for and Seal Duct Leakage
- Perform Proper Boiler Maintenance
- Perform Proper Water Heater Maintenance
- Perform Proper Furnace 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

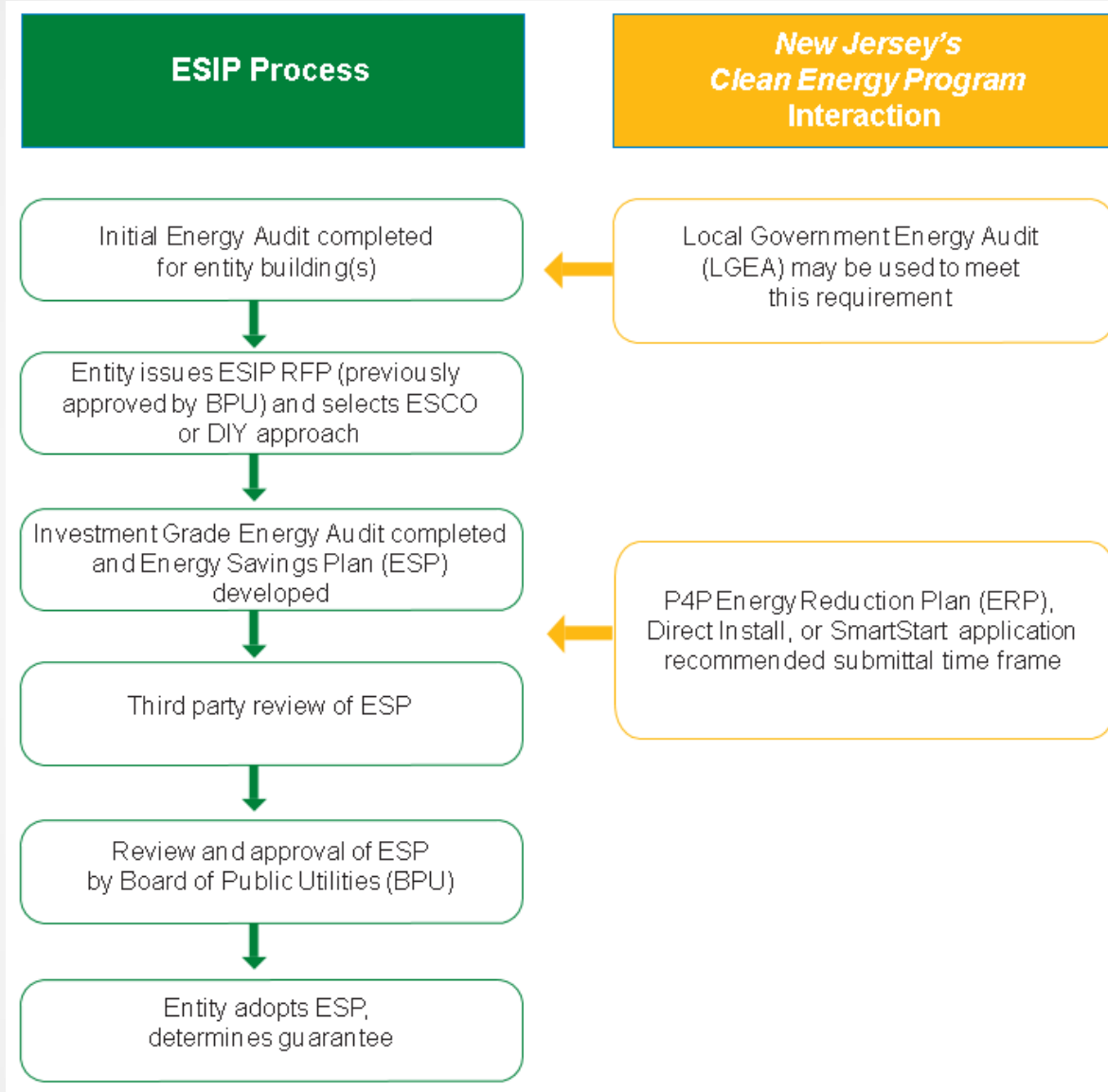
edhutchinson@hutchbiz.com

➤ 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 this requirement)



Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

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