

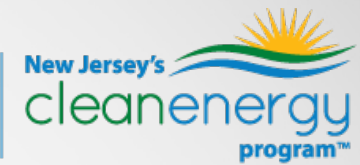
New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Spring Lake Heights Borough

Alex Klieverik, TRC

July 13, 2018

Introductions



- *Spring Lake Heights Borough*
 - Joe May – Public Works Director
 - Janine Gillis – Borough Clerk
- *NJ Clean Energy Program – BPU & TRC*
 - Mike Thulen – ESIP Coordinator
 - Brian DeLuca – Program Manager
 - Alex Klieverik – Auditor
 - Elizabeth Ebinger – Account Manager

Agenda

- The audit process overview
- 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 Spring Lake Heights Borough

Process



Site Visit and Utility Analysis

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

Entities Visited/Analyzed

- Municipal Building
- Public Works
 - Mechanic Shop
 - Main Building
 - Truck Bay
- Community Center
- Water Treatment Plant

All Opportunities



Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual Fuel 2 Savings (MMBtu)	Annual Fuel 3 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	43,774	7.2	0.0	0.0	0.0	0.0	\$6,002.70	\$19,473.36	\$2,915.00	\$16,558.36	2.8	44,080
Install LED Fixtures	2,603	0.4	0.0	0.0	0.0	0.0	\$390.65	\$1,953.39	\$500.00	\$1,453.39	3.7	2,622
Retrofit Fluorescent Fixtures with LED Lamps and Drivers	788	0.3	0.0	0.0	0.0	0.0	\$149.95	\$404.00	\$0.00	\$404.00	2.7	794
Retrofit Fixtures with LED Lamps	40,382	6.6	0.0	0.0	0.0	0.0	\$5,462.10	\$17,115.97	\$2,415.00	\$14,700.97	2.7	40,665
Lighting Control Measures	6,878	1.2	0.0	0.0	0.0	0.0	\$945.92	\$13,308.00	\$1,490.00	\$11,818.00	12.5	6,926
Install Occupancy Sensor Lighting Controls	6,126	1.1	0.0	0.0	0.0	0.0	\$849.47	\$12,768.00	\$1,490.00	\$11,278.00	13.3	6,168
Install High/Low Lighting Controls	752	0.1	0.0	0.0	0.0	0.0	\$96.45	\$540.00	\$0.00	\$540.00	5.6	758
Motor Upgrades	3,003	2.5	0.0	0.0	0.0	0.0	\$571.16	\$10,316.10	\$0.00	\$10,316.10	18.1	3,024
Premium Efficiency Motors	3,003	2.5	0.0	0.0	0.0	0.0	\$571.16	\$10,316.10	\$0.00	\$10,316.10	18.1	3,024
Gas Heating (HVAC/Process) Replacement	0	0.0	135.0	0.0	0.0	135.0	\$1,266.28	\$20,467.12	\$400.00	\$20,067.12	15.8	15,803
Install High Efficiency Furnaces	0	0.0	11.2	0.0	0.0	11.2	\$110.76	\$1,450.07	\$400.00	\$1,050.07	9.5	1,311
Install High Efficiency Unit Heaters	0	0.0	123.8	0.0	0.0	123.8	\$1,155.52	\$19,017.05	\$0.00	\$19,017.05	16.5	14,492
TOTALS	53,655	10.9	135.0	0.0	0.0	135.0	\$8,786.06	\$63,564.58	\$4,805.00	\$58,759.58	6.7	69,833

* - 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).

Cost Effective Opportunities*



**Opportunities considered cost effective have a payback period less than the expedited life of the measure*

Energy Conservation Measure		Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Natural Gas Savings (MMBtu)	Annual Fuel 2 Savings (MMBtu)	Annual Fuel 3 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		43,774	7.2	0.0	0.0	0.0	0.0	\$6,002.70	\$19,473.36	\$2,915.00	\$16,558.36	2.8	44,080
ECM 1	Install LED Fixtures	2,603	0.4	0.0	0.0	0.0	0.0	\$390.65	\$1,953.39	\$500.00	\$1,453.39	3.7	2,622
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	788	0.3	0.0	0.0	0.0	0.0	\$149.95	\$404.00	\$0.00	\$404.00	2.7	794
ECM 3	Retrofit Fixtures with LED Lamps	40,382	6.6	0.0	0.0	0.0	0.0	\$5,462.10	\$17,115.97	\$2,415.00	\$14,700.97	2.7	40,665
Lighting Control Measures		4,623	0.6	0.0	0.0	0.0	0.0	\$600.50	\$5,670.00	\$665.00	\$5,005.00	8.3	4,656
ECM 4	Install Occupancy Sensor Lighting Controls	3,871	0.6	0.0	0.0	0.0	0.0	\$504.05	\$5,130.00	\$665.00	\$4,465.00	8.9	3,898
ECM 5	Install High/Low Lighting Controls	752	0.1	0.0	0.0	0.0	0.0	\$96.45	\$540.00	\$0.00	\$540.00	5.6	758
Motor Upgrades		3,003	2.5	0.0	0.0	0.0	0.0	\$571.16	\$10,316.10	\$0.00	\$10,316.10	18.1	3,024
ECM 6	Premium Efficiency Motors	3,003	2.5	0.0	0.0	0.0	0.0	\$571.16	\$10,316.10	\$0.00	\$10,316.10	18.1	3,024
Gas Heating (HVAC/Process) Replacement		0	0.0	50.7	0.0	0.0	50.7	\$432.82	\$4,570.88	\$400.00	\$4,170.88	9.6	5,938
ECM 7	Install High Efficiency Furnaces	0	0.0	11.2	0.0	0.0	11.2	\$110.76	\$1,450.07	\$400.00	\$1,050.07	9.5	1,311
ECM 8	Install High Efficiency Unit Heaters	0	0.0	39.5	0.0	0.0	39.5	\$322.06	\$3,120.81	\$0.00	\$3,120.81	9.7	4,627
TOTALS		51,400	10.4	50.7	0.0	0.0	50.7	\$7,607.18	\$40,030.34	\$3,980.00	\$36,050.34	4.7	57,697

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Municipal Building



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			29,785	3.6	0.0	\$3,817.82	\$10,275.39	\$1,400.00	\$8,875.39	2.3	29,993
ECM 1	Retrofit Fixtures with LED Lamps	Yes	29,785	3.6	0.0	\$3,817.82	\$10,275.39	\$1,400.00	\$8,875.39	2.3	29,993
Lighting Control Measures			4,388	0.6	0.0	\$562.41	\$3,780.00	\$420.00	\$3,360.00	6.0	4,418
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	3,635	0.5	0.0	\$465.97	\$3,240.00	\$420.00	\$2,820.00	6.1	3,661
ECM 3	Install High/Low Lighting Controls	Yes	752	0.1	0.0	\$96.45	\$540.00	\$0.00	\$540.00	5.6	758
TOTALS FOR HIGH PRIORITY MEASURES			34,173	4.1	0.0	\$4,380.23	\$14,055.39	\$1,820.00	\$12,235.39	2.8	34,412
TOTALS FOR ALL EVALUATED MEASURES			34,173	4.1	0.0	\$4,380.23	\$14,055.39	\$1,820.00	\$12,235.39	2.8	34,412

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Public Works



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			9,589	2.0	0.0	\$1,438.94	\$7,133.37	\$1,330.00	\$5,803.37	4.0	9,656
ECM 1	Install LED Fixtures	Yes	2,603	0.4	0.0	\$390.65	\$1,953.39	\$500.00	\$1,453.39	3.7	2,622
ECM 2	Retrofit Fixtures with LED Lamps	Yes	6,986	1.7	0.0	\$1,048.28	\$5,179.99	\$830.00	\$4,349.99	4.1	7,035
Lighting Control Measures			2,079	0.5	0.0	\$311.99	\$6,750.00	\$735.00	\$6,015.00	19.3	2,094
	Install Occupancy Sensor Lighting Controls	No	2,079	0.5	0.0	\$311.99	\$6,750.00	\$735.00	\$6,015.00	19.3	2,094
Gas Heating (HVAC/Process) Replacement			0	0.0	95.5	\$944.21	\$17,346.31	\$400.00	\$16,946.31	17.9	11,176
ECM 3	Install High Efficiency Furnaces	Yes	0	0.0	11.2	\$110.76	\$1,450.07	\$400.00	\$1,050.07	9.5	1,311
	Install High Efficiency Unit Heaters	No	0	0.0	84.3	\$833.46	\$15,896.24	\$0.00	\$15,896.24	19.1	9,865
TOTALS FOR HIGH PRIORITY MEASURES			9,589	2.0	11.2	\$1,549.70	\$8,583.44	\$1,730.00	\$6,853.44	4.4	10,967
TOTALS FOR ALL EVALUATED MEASURES			11,668	2.6	95.5	\$2,695.14	\$31,229.69	\$2,465.00	\$28,764.69	10.7	22,926

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Community Center



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			3,189	1.1	0.0	\$515.60	\$1,121.92	\$140.00	\$981.92	1.9	3,211
ECM 1	Retrofit Fixtures with LED Lamps	Yes	3,189	1.1	0.0	\$515.60	\$1,121.92	\$140.00	\$981.92	1.9	3,211
Lighting Control Measures			236	0.1	0.0	\$38.08	\$1,890.00	\$245.00	\$1,645.00	43.2	237
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	236	0.1	0.0	\$38.08	\$1,890.00	\$245.00	\$1,645.00	43.2	237
Motor Upgrades			0	0.0	0.0	\$0.00	\$0.00	\$0.00	\$0.00	0.0	0
TOTALS			3,424	1.2	0.0	\$553.68	\$3,011.92	\$385.00	\$2,626.92	4.7	3,448

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Water Treatment Facility



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			1,211	0.5	0.0	\$230.35	\$942.67	\$45.00	\$897.67	3.9	1,220
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	788	0.3	0.0	\$149.95	\$404.00	\$0.00	\$404.00	2.7	794
ECM 2	Retrofit Fixtures with LED Lamps	Yes	423	0.3	0.0	\$80.40	\$538.67	\$45.00	\$493.67	6.1	426
Lighting Control Measures			176	0.1	0.0	\$33.43	\$888.00	\$90.00	\$798.00	23.9	177
	Install Occupancy Sensor Lighting Controls	No	176	0.1	0.0	\$33.43	\$888.00	\$90.00	\$798.00	23.9	177
Motor Upgrades			3,003	2.5	0.0	\$571.16	\$10,316.10	\$0.00	\$10,316.10	18.1	3,024
ECM 3	Premium Efficiency Motors	Yes	3,003	2.5	0.0	\$571.16	\$10,316.10	\$0.00	\$10,316.10	18.1	3,024
Gas Heating (HVAC/Process) Replacement			0	0.0	39.5	\$322.06	\$3,120.81	\$0.00	\$3,120.81	9.7	4,627
ECM 4	Install High Efficiency Unit Heaters	Yes	0	0.0	39.5	\$322.06	\$3,120.81	\$0.00	\$3,120.81	9.7	4,627
TOTALS FOR HIGH PRIORITY MEASURES			4,214	3.0	39.5	\$1,123.56	\$14,379.57	\$45.00	\$14,334.57	12.8	8,870
TOTALS FOR ALL EVALUATED MEASURES			4,390	3.1	39.5	\$1,156.98	\$15,267.57	\$135.00	\$15,132.57	13.1	9,047

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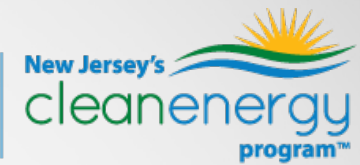
Energy Efficient Best Practices



- 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 Categories:
 - New Construction
 - Renovation
 - Remodeling
 - Equipment Replacement
- Project pre-approval required for certain equipment
- Incentives up to \$500,000 per electric account & \$500,000 per natural gas account
- Specific incentives and individual applications for Lighting, HVAC, VFDs, Refrigeration, Controls and more!

SmartStart: Financing Option



- NJNG provides 0% financing options for SmartStart that will cover up to \$130,000 per year.
- 10 year term-repayments made on regular monthly gas bill
- Need to review project with NJNG to confirm project qualifies.
- The SAVEGREEN program can help with a consultation to discuss your Commercial Energy Efficiency Project.



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 an average 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/building 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

Hutchinson Mechanical Services

Ed Hutchinson

856-429-5828 x215

edhutchinson@hutchbiz.com

Direct Install: Financing Option



- Eligible NJNG customers can finance the remaining 30 percent balance at 0% APR through the “SAVEGREEN Project® On-Bill Repayment Program” (OBRP) for 36 months.



Direct Install: Financing Option



- Questions? Contact:

Jerry Ryan

Energy Efficiency Operations Manager

New Jersey Natural Gas

732-433-4362 (cell)

732 378 4920 (office)

jryan@njng.com



Recommended NJCEP Incentives per Building



Entity Name	SmartStart	Direct Install
Municipal Building	X	X
Public Works	X	X
Community Center	X	X
Water Treatment Plant & Well	X	X

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

ESIP Process

New Jersey's Clean Energy Program Interaction

Initial Energy Audit completed
for entity building(s)

Local Government Energy Audit
(LGEA) may be used to meet
this requirement

Entity issues ESIP RFP (previously
approved by BPU) and selects ESCO
or DIY approach

Investment Grade Energy Audit completed
and Energy Savings Plan (ESP)
developed

P4P Energy Reduction Plan (ERP),
Direct Install, or SmartStart application
recommended submittal time frame

Third party review of ESP

Review and approval of ESP
by Board of Public Utilities (BPU)

Entity adopts ESP,
determines guarantee



FOR MORE INFORMATION

ESIP

Mike Thulen

ESIP Coordinator

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Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

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