



New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Borough of Highland Park

TRC Energy Services

July 27, 2018

Introductions



- *Borough of Highland Park*
 - Teri Jover– Borough Administrator
 - Mike Wieczorkiewicz – Foreman
 - Scott Brescher- Construction Official
- *NJ Clean Energy Program*
 - Brian DeLuca- Program Manager
 - Moussa Traore–Auditor
 - Sarah Walters – LGEA Account Manager
 - Arif Welcher – BPU Ombudsman
 - Upendra J. Chivukula – BPU Commissioner

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 Highland Park 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
- Solar Photovoltaic (PV)

Sites Visited/Analyzed

- Borough Hall
- Senior & Youth Recreation Center
- Police Department
- Fire Department
- Public Works Department
- Library
- Environmental Center

All Opportunities



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	147,609	31.4	0.0	\$21,366.30	\$92,371.91	\$14,960.00	\$77,411.91	3.6	148,641
Install LED Fixtures	43,240	8.9	0.0	\$6,207.97	\$31,799.95	\$7,445.00	\$24,354.95	3.9	43,543
Retrofit Fluorescent Fixtures with LED Lamps and Drivers	8,080	1.8	0.0	\$1,088.20	\$5,869.00	\$70.00	\$5,799.00	5.3	8,136
Retrofit Fixtures with LED Lamps	95,921	20.6	0.0	\$14,020.84	\$53,950.07	\$7,445.00	\$46,505.07	3.3	96,591
Install LED Exit Signs	368	0.0	0.0	\$49.29	\$752.89	\$0.00	\$752.89	15.3	370
Lighting Control Measures	16,493	1.8	0.0	\$2,145.45	\$5,264.00	\$500.00	\$4,764.00	2.2	16,608
Install Occupancy Sensor Lighting Controls	9,804	1.2	0.0	\$1,292.21	\$4,064.00	\$500.00	\$3,564.00	2.8	9,872
Install High/Low Lighting Controls	6,689	0.6	0.0	\$853.24	\$1,200.00	\$0.00	\$1,200.00	1.4	6,736
Motor Upgrades	2,973	0.8	0.0	\$434.47	\$2,995.91	\$0.00	\$2,995.91	6.9	2,994
Premium Efficiency Motors	2,973	0.8	0.0	\$434.47	\$2,995.91	\$0.00	\$2,995.91	6.9	2,994
Variable Frequency Drive (VFD) Measures	3,316	1.4	0.0	\$480.17	\$6,551.70	\$800.00	\$5,751.70	12.0	3,339
Install VFDs on Constant Volume (CV) HVAC	3,316	1.4	0.0	\$480.17	\$6,551.70	\$800.00	\$5,751.70	12.0	3,339
Electric Unitary HVAC Measures	23,688	15.8	0.0	\$3,928.84	\$146,412.02	\$8,377.50	\$138,034.52	35.1	23,853
Install High Efficiency Electric AC	23,688	15.8	0.0	\$3,928.84	\$146,412.02	\$8,377.50	\$138,034.52	35.1	23,853
Gas Heating (HVAC/Process) Replacement	0	0.0	108.4	\$1,077.54	\$42,462.78	\$4,606.80	\$37,855.98	35.1	12,698
Install High Efficiency Hot Water Boilers	0	0.0	67.1	\$666.96	\$34,713.98	\$3,406.80	\$31,307.18	46.9	7,858
Install High Efficiency Furnaces	0	0.0	41.3	\$410.58	\$7,748.80	\$1,200.00	\$6,548.80	16.0	4,840
Domestic Water Heating Upgrade	2,633	0.0	1.2	\$401.99	\$121.89	\$0.00	\$121.89	0.3	2,795
Install Low-Flow Domestic Hot Water Devices	2,633	0.0	1.2	\$401.99	\$121.89	\$0.00	\$121.89	0.3	2,795
Plug Load Equipment Control - Vending Machine	3,566	0.0	0.0	\$477.25	\$690.00	\$0.00	\$690.00	1.4	3,591
Vending Machine Control	3,566	0.0	0.0	\$477.25	\$690.00	\$0.00	\$690.00	1.4	3,591
TOTALS	200,278	51.1	109.7	\$30,312.01	\$296,870.21	\$29,244.30	\$267,625.91	8.8	214,519

* - 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*



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		147,609	31.4	0.0	\$21,366.30	\$92,371.91	\$14,960.00	\$77,411.91	3.6	148,641
ECM 1	Install LED Fixtures	43,240	8.9	0.0	\$6,207.97	\$31,799.95	\$7,445.00	\$24,354.95	3.9	43,543
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	8,080	1.8	0.0	\$1,088.20	\$5,869.00	\$70.00	\$5,799.00	5.3	8,136
ECM 3	Retrofit Fixtures with LED Lamps	95,921	20.6	0.0	\$14,020.84	\$53,950.07	\$7,445.00	\$46,505.07	3.3	96,591
ECM 4	Install LED Exit Signs	368	0.0	0.0	\$49.29	\$752.89	\$0.00	\$752.89	15.3	370
Lighting Control Measures		16,493	1.8	0.0	\$2,145.45	\$5,264.00	\$500.00	\$4,764.00	2.2	16,608
ECM 5	Install Occupancy Sensor Lighting Controls	9,804	1.2	0.0	\$1,292.21	\$4,064.00	\$500.00	\$3,564.00	2.8	9,872
ECM 6	Install High/Low Lighting Controls	6,689	0.6	0.0	\$853.24	\$1,200.00	\$0.00	\$1,200.00	1.4	6,736
Motor Upgrades		2,973	0.8	0.0	\$434.47	\$2,995.91	\$0.00	\$2,995.91	6.9	2,994
ECM 7	Premium Efficiency Motors	2,973	0.8	0.0	\$434.47	\$2,995.91	\$0.00	\$2,995.91	6.9	2,994
Variable Frequency Drive (VFD) Measures		3,316	1.4	0.0	\$480.17	\$6,551.70	\$800.00	\$5,751.70	12.0	3,339
ECM 8	Install VFDs on Constant Volume (CV) HVAC	3,316	1.4	0.0	\$480.17	\$6,551.70	\$800.00	\$5,751.70	12.0	3,339
Domestic Water Heating Upgrade		2,633	0.0	1.2	\$401.99	\$121.89	\$0.00	\$121.89	0.3	2,795
ECM 9	Install Low-Flow Domestic Hot Water Devices	2,633	0.0	1.2	\$401.99	\$121.89	\$0.00	\$121.89	0.3	2,795
Plug Load Equipment Control - Vending Machine		3,566	0.0	0.0	\$477.25	\$690.00	\$0.00	\$690.00	1.4	3,591
ECM 10	Vending Machine Control	3,566	0.0	0.0	\$477.25	\$690.00	\$0.00	\$690.00	1.4	3,591
TOTALS		176,590	35.3	1.2	\$25,305.63	\$107,995.41	\$16,260.00	\$91,735.41	3.6	177,968

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Benchmarking



Borough Hall

ENERGY STAR® Statement of Energy Performance

Highland Park Municipal Building (Borough Hall)

Primary Property Type: Office
 Gross Floor Area (ft²): 15,820
 Built: 1976

For Year Ending: June 30, 2017
 Date Generated: April 30, 2018

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Highland Park Municipal Building (Borough Hall) 221 S. 5th Avenue Highland Park, New Jersey 08904	Borough of Highland Park 221 South Fifth Avenue Highland Park, NJ 08904 (732) 810-3789	Teri Jover 221 South Fifth Avenue Highland Park, NJ 08904 (732) 810-3789 tjover@hpboro.com

Property ID: 6308319

Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison	
60 kBtu/ft ²	Natural Gas (kBtu) 429,548 (45%)	National Median Site EUI (kBtu/ft ²)	67.8
	Electric - Grid (kBtu) 495,249 (52%)	National Median Source EUI (kBtu/ft ²)	145.1
	Electric - Solar (kBtu) 23,911 (2%)	% Diff from National Median Source EUI	-12%
Source EUI		Annual Emissions	
128.3 kBtu/ft ²		Greenhouse Gas Emissions (Metric Tons CO ₂ e/year)	78

Signature & Stamp of Verifying Professional
 I _____ (Name) verify that the above information is true and correct to the best of my knowledge.
 Signature: _____ Date: _____

Professional Engineer Stamp
 (if applicable)

Building Name	ENERGY STAR Score
Borough Hall	61
Senior & Youth Recreation Center	N/A
Police Department	N/A
Fire Department	N/A
Public Works Department	N/A
Library	N/A
Environmental Center	N/A

Borough Hall



Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Dem and 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			19,177	5.2	0.0	\$2,777.20	\$14,337.45	\$2,630.00	\$11,707.45	4.2	19,312
ECM 1	Install LED Fixtures	Yes	6,395	1.0	0.0	\$926.07	\$3,125.42	\$800.00	\$2,325.42	2.5	6,440
ECM 2	Retrofit Fixtures with LED Lamps	Yes	12,730	4.2	0.0	\$1,843.52	\$11,104.48	\$1,830.00	\$9,274.48	5.0	12,819
ECM 3	Install LED Exit Signs	Yes	53	0.0	0.0	\$7.61	\$107.56	\$0.00	\$107.56	14.1	53
Lighting Control Measures			500	0.2	0.0	\$72.39	\$348.00	\$40.00	\$308.00	4.3	503
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	500	0.2	0.0	\$72.39	\$348.00	\$40.00	\$308.00	4.3	503
Motor Upgrades			1,137	0.4	0.0	\$164.69	\$1,842.12	\$0.00	\$1,842.12	11.2	1,145
ECM 5	Premium Efficiency Motors	Yes	1,137	0.4	0.0	\$164.69	\$1,842.12	\$0.00	\$1,842.12	11.2	1,145
Variable Frequency Drive (VFD) Measures			3,316	1.4	0.0	\$480.17	\$6,551.70	\$800.00	\$5,751.70	12.0	3,339
ECM 6	Install VFDs on Constant Volume (CV) HVAC	Yes	3,316	1.4	0.0	\$480.17	\$6,551.70	\$800.00	\$5,751.70	12.0	3,339
Electric Unitary HVAC Measures			11,269	8.1	0.0	\$1,631.94	\$86,887.92	\$4,996.00	\$81,891.92	50.2	11,348
	Install High Efficiency Electric AC	No	11,269	8.1	0.0	\$1,631.94	\$86,887.92	\$4,996.00	\$81,891.92	50.2	11,348
Gas Heating (HVAC/Process) Replacement			0	0.0	16.4	\$162.11	\$3,625.17	\$400.00	\$3,225.17	19.9	1,923
	Install High Efficiency Furnaces	No	0	0.0	16.4	\$162.11	\$3,625.17	\$400.00	\$3,225.17	19.9	1,923
Domestic Water Heating Upgrade			361	0.0	0.0	\$52.24	\$28.68	\$0.00	\$28.68	0.5	363
ECM 7	Install Low-Flow Domestic Hot Water Devices	Yes	361	0.0	0.0	\$52.24	\$28.68	\$0.00	\$28.68	0.5	363
Plug Load Equipment Control - Vending Machine			1,612	0.0	0.0	\$233.42	\$230.00	\$0.00	\$230.00	1.0	1,623
ECM 8	Vending Machine Control	Yes	1,612	0.0	0.0	\$233.42	\$230.00	\$0.00	\$230.00	1.0	1,623
TOTALS FOR ALL RECOMMENDED MEASURES			26,103	7.1	0.0	\$3,780.12	\$23,337.95	\$3,470.00	\$19,867.95	5.3	26,285.4
TOTALS FOR ALL EVALUATED MEASURES			37,372	15.2	16.4	\$5,574.17	\$113,851.05	\$8,866.00	\$104,985.05	18.8	39,556

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Senior and Youth Recreation 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			9,873	5.1	0.0	\$2,010.60	\$15,072.56	\$2,570.00	\$12,502.56	6.2	9,942
ECM 1	Install LED Fixtures	Yes	3,724	2.4	0.0	\$758.35	\$8,750.00	\$1,545.00	\$7,205.00	9.5	3,750
ECM 2	Retrofit Fixtures with LED Lamps	Yes	6,149	2.6	0.0	\$1,252.25	\$6,322.56	\$1,025.00	\$5,297.56	4.2	6,192
Lighting Control Measures			395	0.1	0.0	\$80.47	\$432.00	\$40.00	\$392.00	4.9	398
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	203	0.1	0.0	\$41.32	\$232.00	\$40.00	\$192.00	4.6	204
ECM 4	Install High/Low Lighting Controls	Yes	192	0.1	0.0	\$39.16	\$200.00	\$0.00	\$200.00	5.1	194
Electric Unitary HVAC Measures			8,323	6.0	0.0	\$1,694.89	\$43,641.38	\$2,737.50	\$40,903.88	24.1	8,381
	Install High Efficiency Electric AC	No	8,323	6.0	0.0	\$1,694.89	\$43,641.38	\$2,737.50	\$40,903.88	24.1	8,381
Gas Heating (HVAC/Process) Replacement			0	0.0	33.6	\$332.66	\$26,259.74	\$2,406.80	\$23,852.94	71.7	3,933
	Install High Efficiency Hot Water Boilers	No	0	0.0	33.6	\$332.66	\$26,259.74	\$2,406.80	\$23,852.94	71.7	3,933
Domestic Water Heating Upgrade			0	0.0	0.5	\$4.91	\$35.85	\$0.00	\$35.85	7.3	58
ECM 5	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	0.5	\$4.91	\$35.85	\$0.00	\$35.85	7.3	58
TOTALS FOR ALL RECOMMENDED MEASURES			10,268	5.2	0.5	\$2,095.98	\$15,540.41	\$2,610.00	\$12,930.41	6.2	10,397.9
TOTALS FOR ALL EVALUATED MEASURES			18,591	11.2	34.1	\$4,123.53	\$85,441.53	\$7,754.30	\$77,687.23	18.8	22,712

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Police Department



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			15,635	1.4	0.0	\$1,712.56	\$4,888.99	\$150.00	\$4,738.99	2.8	15,744
ECM 1	Retrofit Fixtures with LED Lamps	Yes	15,635	1.4	0.0	\$1,712.56	\$4,888.99	\$150.00	\$4,738.99	2.8	15,744
Lighting Control Measures			7,739	0.6	0.0	\$847.72	\$1,844.00	\$180.00	\$1,664.00	2.0	7,793
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	3,978	0.3	0.0	\$435.77	\$1,244.00	\$180.00	\$1,064.00	2.4	4,006
ECM 3	Install High/Low Lighting Controls	Yes	3,761	0.3	0.0	\$411.95	\$600.00	\$0.00	\$600.00	1.5	3,787
TOTALS			23,374	2.0	0.0	\$2,560.28	\$6,732.99	\$330.00	\$6,402.99	2.5	23,537

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Fire Department



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			37,840	3.8	0.0	\$5,561.45	\$10,185.09	\$1,850.00	\$8,335.09	1.5	38,105
ECM 1	Install LED Fixtures	Yes	3,149	0.5	0.0	\$462.86	\$2,734.74	\$700.00	\$2,034.74	4.4	3,171
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	3,608	0.3	0.0	\$530.27	\$819.00	\$70.00	\$749.00	1.4	3,633
ECM 3	Retrofit Fixtures with LED Lamps	Yes	30,978	3.0	0.0	\$4,552.87	\$6,416.24	\$1,080.00	\$5,336.24	1.2	31,194
ECM 4	Install LED Exit Signs	Yes	105	0.0	0.0	\$15.45	\$215.11	\$0.00	\$215.11	13.9	106
Lighting Control Measures			7,280	0.7	0.0	\$1,070.00	\$2,060.00	\$180.00	\$1,880.00	1.8	7,331
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	4,544	0.4	0.0	\$667.87	\$1,660.00	\$180.00	\$1,480.00	2.2	4,576
ECM 6	Install High/Low Lighting Controls	Yes	2,736	0.2	0.0	\$402.13	\$400.00	\$0.00	\$400.00	1.0	2,755
Motor Upgrades			1,836	0.4	0.0	\$269.78	\$1,153.79	\$0.00	\$1,153.79	4.3	1,848
ECM 7	Premium Efficiency Motors	Yes	1,836	0.4	0.0	\$269.78	\$1,153.79	\$0.00	\$1,153.79	4.3	1,848
Electric Unitary HVAC Measures			4,096	1.8	0.0	\$602.01	\$15,882.72	\$644.00	\$15,238.72	25.3	4,125
	Install High Efficiency Electric AC	No	4,096	1.8	0.0	\$602.01	\$15,882.72	\$644.00	\$15,238.72	25.3	4,125
Gas Heating (HVAC/Process) Replacement			0	0.0	58.4	\$582.78	\$12,577.87	\$1,800.00	\$10,777.87	18.5	6,842
	Install High Efficiency Hot Water Boilers	No	0	0.0	33.5	\$334.30	\$8,454.24	\$1,000.00	\$7,454.24	22.3	3,925
	Install High Efficiency Furnaces	No	0	0.0	24.9	\$248.47	\$4,123.63	\$800.00	\$3,323.63	13.4	2,917
Domestic Water Heating Upgrade			1,894	0.0	0.0	\$278.32	\$21.51	\$0.00	\$21.51	0.1	1,907
ECM 8	Install Low-Flow Domestic Hot Water Devices	Yes	1,894	0.0	0.0	\$278.32	\$21.51	\$0.00	\$21.51	0.1	1,907
TOTALS FOR ALL RECOMMENDED MEASURES			48,850	4.8	0.0	\$7,179.55	\$13,420.39	\$2,030.00	\$11,390.39	1.6	49,191.5
TOTALS FOR ALL EVALUATED MEASURES			52,946	6.6	58.4	\$8,364.34	\$41,880.99	\$4,474.00	\$37,406.99	4.5	60,158

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Public Works Department



Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Dem and 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			27,622	6.0	0.0	\$3,446.11	\$14,535.65	\$2,110.00	\$12,425.65	3.6	27,815
ECM 1	Install LED Fixtures	Yes	19,898	3.3	0.0	\$2,482.52	\$6,250.83	\$1,600.00	\$4,650.83	1.9	20,037
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	4,472	1.5	0.0	\$557.93	\$5,050.00	\$0.00	\$5,050.00	9.1	4,503
ECM 3	Retrofit Fixtures with LED Lamps	Yes	3,041	1.1	0.0	\$379.43	\$2,804.60	\$510.00	\$2,294.60	6.0	3,063
ECM 4	Install LED Exit Signs	Yes	210	0.0	0.0	\$26.23	\$430.22	\$0.00	\$430.22	16.4	212
Lighting Control Measures			369	0.1	0.0	\$46.01	\$348.00	\$20.00	\$328.00	7.1	371
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	369	0.1	0.0	\$46.01	\$348.00	\$20.00	\$328.00	7.1	371
Domestic Water Heating Upgrade			0	0.0	0.7	\$7.19	\$14.34	\$0.00	\$14.34	2.0	86
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	0.7	\$7.19	\$14.34	\$0.00	\$14.34	2.0	86
Plug Load Equipment Control - Vending Machine			1,954	0.0	0.0	\$243.83	\$460.00	\$0.00	\$460.00	1.9	1,968
ECM 7	Vending Machine Control	Yes	1,954	0.0	0.0	\$243.83	\$460.00	\$0.00	\$460.00	1.9	1,968
TOTALS			29,945	6.1	0.7	\$3,743.13	\$15,357.99	\$2,130.00	\$13,227.99	3.5	30,240

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** - Simple Payback Period is based on net measure costs (i.e. after incentives).



Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			36,921	9.7	\$5,783.92	\$32,492.30	\$5,610.00	\$26,882.30	4.6	37,179
ECM 1	Install LED Fixtures	Yes	10,074	1.7	\$1,578.17	\$10,938.96	\$2,800.00	\$8,138.96	5.2	10,144
ECM 2	Retrofit Fixtures with LED Lamps	Yes	26,847	8.0	\$4,205.74	\$21,553.34	\$2,810.00	\$18,743.34	4.5	27,034
Domestic Water Heating Upgrade			379	0.0	\$59.33	\$21.51	\$0.00	\$21.51	0.4	381
ECM 3	Install Low-Flow Domestic Hot Water Devices	Yes	379	0.0	\$59.33	\$21.51	\$0.00	\$21.51	0.4	381
TOTALS			37,299	9.7	\$5,843.25	\$32,513.81	\$5,610.00	\$26,903.81	4.6	37,560

* - 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).

Environmental 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			541	0.2	0.0	\$74.47	\$859.86	\$40.00	\$819.86	11.0	545
ECM 1	Retrofit Fixtures with LED Lamps	Yes	541	0.2	0.0	\$74.47	\$859.86	\$40.00	\$819.86	11.0	545
Lighting Control Measures			210	0.1	0.0	\$28.85	\$232.00	\$40.00	\$192.00	6.7	211
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	210	0.1	0.0	\$28.85	\$232.00	\$40.00	\$192.00	6.7	211
TOTALS			750	0.3	0.0	\$103.32	\$1,091.86	\$80.00	\$1,011.86	9.8	756

* - 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).

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!

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

Tri-State Light & Energy, Inc.

Alan Rhode

610-789-1900 x226

asr@tsle.com

Recommended NJCEP Incentives per Building



Entity Name	SmartStart	Direct Install
Borough Hall	X	X
Senior & Youth Recreation Center	X	X
Police Department	X	
Fire Department	X	X
Public Works Department	X	X
Library	X	X
Environmental Center	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

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