

New Jersey's Clean Energy Program

LGEA Exit Meeting for:

Egg Harbor Township

Aimee Lalonde, TRC

February 23, 2018

Meeting Setup



1) Dial the following:

1-877-304-9323

2) When prompted, enter the code below:

3587465#

Introductions



- Egg Harbor Township
 - Matthew von der Hayden
 - Jaimin Jha
- NJ Clean Energy Program TRC

Auditor: Aimee Lalonde

Case Manager: Amanda Muench

Outreach Manager: Jim Friedl

Agenda



- Overview of LGEA process (application to deliverable)
- Energy use & existing conditions
- Review of Energy Conservation Measures (ECMs) identified
- Questions or concerns regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Egg Harbor Township





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

All Buildings

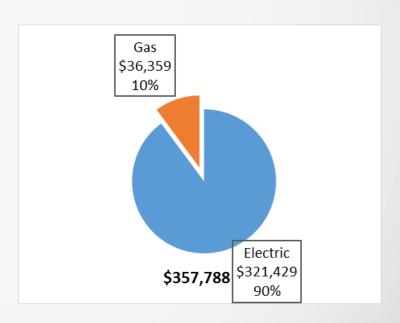


Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Domestic Hot Water
- Plug Loads

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

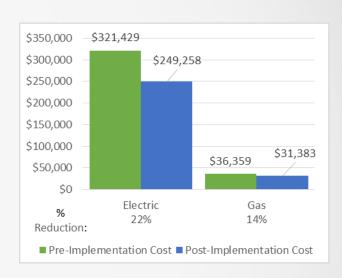


All Buildings



Overview of Existing Energy Use:

Site Name	Square Footage	Electric Utility	Gas Utility
Ambulance Building	4,480	Atlantic City Electric	South Jersey Gas
Tony Canale Park	1,000	Atlantic City Electric	
Veterans Memorial Park	9,000	Atlantic City Electric	South Jersey Gas
Historical Society Museum and Library	3,200	Atlantic City Electric	
Police Athletic League Building (6 Atlas)	1,692	Atlantic City Electric	South Jersey Gas
Police Athletic League Building (2020 Leap)	1,600	Atlantic City Electric	South Jersey Gas
Police Athletic League Building (2590 Ridge)	5,820	Atlantic City Electric	South Jersey Gas
Police Athletic League Building (2594 Tilton)	3,550	Atlantic City Electric	South Jersey Gas
Municipal Building	38,555	Atlantic City Electric	South Jersey Gas
Public Works	14,800	Atlantic City Electric	South Jersey Gas
Community Center	56,616	Atlantic City Electric	South Jersey Gas
Childs Kirk Memorial Park	3,400	Atlantic City Electric	



Energy Conservation Measure (ECM) Summaries:

- Only Recommended ECM Projects \$475,500 Cost with a 6 year payback period
- ALL Evaluated ECM Projects \$1,250,000 Cost with a 13 year payback period

Only Recommended ECM Projects for All Buildings

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)**	CO₂e Emissions Reduction (Ibs)
Lighting Upgrades	349,385	90.7	0.0	\$51,564.97	\$339,416.44	\$37,865.00	\$301,551.44	5.8	351,828
ECM 1 Install LED Fixtures	89,110	19.3	0.0	\$13,968.36	\$142,933.58	\$16,910.00	\$126,023.58	9.0	89,733
ECM 2 Retrofit Fluorescent Fix tures with LED Lamps and Drivers	89,379	30.1	0.0	\$13,412.35	\$64,637.84	\$6,865.00	\$57,772.84	4.3	90,004
ECM 3 Retrofit Fix tures with LED Lamps	166,832	41.0	0.0	\$23,609.89	\$125,606.81	\$14,090.00	\$111,516.81	4.7	167,998
ECM 4 Install LED Exit Signs	4,065	0.3	0.0	\$574.37	\$6,238.21	\$0.00	\$6,238.21	10.9	4,093
Lighting Control Measures	48,024	10.5	0.0	\$6,692.35	\$41,242.00	\$8,795.00	\$32,447.00	4.8	48,360
ECM 5 Install Occupancy Sensor Lighting Controls	31,256	8.3	0.0	\$4,408.01	\$30,692.00	\$4,340.00	\$26,352.00	6.0	31,475
ECM 6 Install Daylight Dimming Controls	8,223	1.1	0.0	\$1,121.44	\$1,950.00	\$325.00	\$1,625.00	1.4	8,280
ECM 7 Install High/Low Lighitng Controls	8,545	1.1	0.0	\$1,162.90	\$8,600.00	\$4,130.00	\$4,470.00	3.8	8,605
Motor Upgrades	5,757	0.5	0.0	\$770.41	\$7,807.64	\$0.00	\$7,807.64	10.1	5,797
ECM 8 Premium Efficiency Motors	5,757	0.5	0.0	\$770.41	\$7,807.64	\$0.00	\$7,807.64	10.1	5,797
Variable Frequency Drive (VFD) Measures	5,972	1.3	0.0	\$799.21	\$6,551.70	\$0.00	\$6,551.70	8.2	6,013
ECM 9 Install VFDs on Hot Water Pumps	5,972	1.3	0.0	\$799.21	\$6,551.70	\$0.00	\$6,551.70	8.2	6,013
Gas Heating (HVAC/Process) Replacement	0	0.0	37.7	\$362.69	\$3,971.79	\$1,500.00	\$2,471.79	6.8	4,416
ECM 10 Install Low-Intensity Infrared Heating	0	0.0	37.7	\$362.69	\$3,971.79	\$1,500.00	\$2,471.79	6.8	4,416
HVAC System Improvements	204	0.0	41.3	\$496.47	\$1,580.48	\$0.00	\$1,580.48	3.2	5,045
ECM 11 Install Programmable Thermostats	95	0.0	41.3	\$470.98	\$1,319.48	\$0.00	\$1,319.48	2.8	4,935
ECM 12 Install Pipe Insulation	109	0.0	0.0	\$25.49	\$261.00	\$0.00	\$261.00	10.2	110
Domestic Water Heating Upgrade	12,381	4.5	-32.8	\$1,600.41	\$11,934.07	\$1,200.00	\$10,734.07	6.7	8,630
ECM 13 Install Tankless Water Heater	10,694	4.5	-36.5	\$1,279.73	\$11,568.40	\$1,200.00	\$10,368.40	8.1	6,496
ECM 14 Install Low-Flow Domestic Hot Water Devices	1,687	0.0	3.7	\$320.68	\$365.67	\$0.00	\$365.67	1.1	2,133
Food Service Equipment & Refrigeration Measures	2,889	0.3	0.0	\$552.59	\$4,450.00	\$0.00	\$4,450.00	8.1	2,909
ECM 15 Replace Refrigeration Equipment	2,889	0.3	0.0	\$552.59	\$4,450.00	\$0.00	\$4,450.00	8.1	2,909
Plug Load Equipment Control - Vending Machine	8,059	0.0	0.0	\$1,180.06	\$1,150.00	\$0.00	\$1,150.00	1.0	8,116
ECM 16 Vending Machine Control	8,059	0.0	0.0	\$1,180.06	\$1,150.00	\$0.00	\$1,150.00	1.0	8,116
Custom Measures	76,460	0.0	386.8	\$15,517.68	\$106,733.80	\$0.00	\$106,733.80	6.9	122,288
ECM 17 <enter custom="" measure="" name=""></enter>	23,193	0.0	128.9	\$4,865.54	\$16,984.80	\$0.00	\$16,984.80	3.5	38,452
ECM 18 <enter custom="" measure="" name=""></enter>	53,267	0.0	257.9	\$10,652.14	\$89,749.00	\$0.00	\$89,749.00	8.4	83,835
TOTALS	509,130	107.9	433.1	\$79,536.84	\$524,837.92	\$49,360.00	\$475,477.92	6.0	563,400

^{* -} 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).

ALL Evaluated ECM Projects for All Buildings

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	393,393	90.7	0.0	\$59,678.02	\$896,586.36	\$39,555.00	\$857,031.36	14.4	396,144
Install LED Fixtures	133,118	19.3	0.0	\$22,081.41	\$700,103.50	\$18,600.00	\$681,503.50	30.9	134,049
Retrofit Fluorescent Fixtures with LED Lamps and Drivers	89,379	30.1	0.0	\$13,412.35	\$64,637.84	\$6,865.00	\$57,772.84	4.3	90,004
Retrofit Fix tures with LED Lamps	166,832	41.0	0.0	\$23,609.89	\$125,606.81	\$14,090.00	\$111,516.81	4.7	167,998
Install LED Exit Signs	4,065	0.3	0.0	\$574.37	\$6,238.21	\$0.00	\$6,238.21	10.9	4,093
Lighting Control Measures	48,313	10.7	0.0	\$6,753.36	\$42,592.00	\$8,970.00	\$33,622.00	5.0	48,651
Install Occupancy Sensor Lighting Controls	31,545	8.5	0.0	\$4,469.02	\$32,042.00	\$4,515.00	\$27,527.00	6.2	31,766
Install Daylight Dimming Controls	8,223	1.1	0.0	\$1,121.44	\$1,950.00	\$325.00	\$1,625.00	1.4	8,280
Install High/Low Lighitng Controls	8,545	1.1	0.0	\$1,162.90	\$8,600.00	\$4,130.00	\$4,470.00	3.8	8,605
Motor Upgrades	5,757	0.5	0.0	\$770.41	\$7,807.64	\$0.00	\$7,807.64	10.1	5,797
Premium Efficiency Motors	5,757	0.5	0.0	\$770.41	\$7,807.64	\$0.00	\$7,807.64	10.1	5,797
Variable Frequency Drive (VFD) Measures	5,972	1.3	0.0	\$799.21	\$6,551.70	\$0.00	\$6,551.70	8.2	6,013
Install VFDs on Hot Water Pumps	5,972	1.3	0.0	\$799.21	\$6,551.70	\$0.00	\$6,551.70	8.2	6,013
Electric Unitary HVAC Measures	10,733	5.9	0.0	\$1,868.48	\$48,901.10	\$2,024.00	\$46,877.10	25.1	10,808
Install High Efficiency Electric AC	5,673	2.3	0.0	\$848.14	\$24,909.30	\$1,104.00	\$23,805.30	28.1	5,712
Install High Efficiency Heat Pumps	5,060	3.6	0.0	\$1,020.34	\$23,991.80	\$920.00	\$23,071.80	22.6	5,096
Gas Heating (HVAC/Process) Replacement	0	0.0	52.3	\$558.35	\$9,636.12	\$1,900.00	\$7,736.12	13.9	6,126
Install High Efficiency Furnaces	0	0.0	14.6	\$195.66	\$5,664.33	\$400.00	\$5,264.33	26.9	1,710
Install Low-Intensity Infrared Heating	0	0.0	37.7	\$362.69	\$3,971.79	\$1,500.00	\$2,471.79	6.8	4,416
HVAC System Improvements	2,640	0.5	41.3	\$830.32	\$3,570.09	\$500.00	\$3,070.09	3.7	7,498
Install Programmable Thermostats	243	0.0	41.3	\$498.62	\$2,309.09	\$0.00	\$2,309.09	4.6	5,084
Install Dual Enthalpy Outside Economizer Control	2,288	0.5	0.0	\$306.21	\$1,000.00	\$500.00	\$500.00	1.6	2,304
Install Pipe Insulation	109	0.0	0.0	\$25.49	\$261.00	\$0.00	\$261.00	10.2	110
Domestic Water Heating Upgrade	12,381	4.5	-32.8	\$1,600.41	\$11,934.07	\$1,200.00	\$10,734.07	6.7	8,630
Install Tankless Water Heater	10,694	4.5	-36.5	\$1,279.73	\$11,568.40	\$1,200.00	\$10,368.40	8.1	6,496
Install Low-Flow Domestic Hot Water Devices	1,687	0.0	3.7	\$320.68	\$365.67	\$0.00	\$365.67	1.1	2,133
Food Service Equipment & Refrigeration Measures	2,889	0.3	0.0	\$552.59	\$4,450.00	\$0.00	\$4,450.00	8.1	2,909
Replace Refrigeration Equipment	2,889	0.3	0.0	\$552.59	\$4,450.00	\$0.00	\$4,450.00	8.1	2,909
Plug Load Equipment Control - Vending Machine	8,059	0.0	0.0	\$1,180.06	\$1,150.00	\$0.00	\$1,150.00	1.0	8,116
Vending Machine Control	8,059	0.0	0.0	\$1,180.06	\$1,150.00	\$0.00	\$1,150.00	1.0	8,116
Custom Measures	112,771	0.0	416.4	\$20,619.59	\$254,180.05	\$0.00	\$254,180.05	12.3	162,317
<enter custom="" measure="" name=""></enter>	59,503	0.0	158.5	\$9,967.45	\$164,431.05	\$0.00	\$164,431.05	16.5	78,482
<enter custom="" measure="" name=""></enter>	53,267	0.0	257.9	\$10,652.14	\$89,749.00	\$0.00	\$89,749.00	8.4	83,835
TOTALS	602,908	114.5	477.3	\$95,210.80	\$1,287,359.13	\$54,149.00	\$1,233,210.13	13.0	663,009

^{* -} 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).

Overview of Results per Building



	Only Recomm	ended ECMs		All Evaluated	ECMs	
Building	Annual Energy Cost Savings (\$)	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	Annual Energy Cost Savings (\$)	Estimated Net Cost (\$)	Simple Payback Period (yrs)**
Ambulance Building	\$3,170	\$10,020	3.2	\$3,170	\$10,020	3.2
Police Athletic League Building (6 Atlas)	\$800	\$2,720	3.4	\$1,000	\$7,990	8.0
Police Athletic League Building (2020 Leap)	\$160	\$3,300	20.6	\$160	\$3,300	20.6
Police Athletic League Building (2590 Ridge)	\$5,440	\$34,990	6.4	\$5,660	\$39,200	6.9
Police Athletic League Building (2594 Tilton)	\$1,090	\$7,650	7.0	\$2,110	\$30,730	14.6
Municipal Building	\$34,180	\$303,030	8.9	\$34,180	\$303,030	8.9
Public Works	\$7,660	\$82,690	10.8	\$7,810	\$87,040	11.1
Community Center	\$29,140	\$172,260	5.9	\$29,140	\$172,260	5.9
Childs Kirk Memorial Park	\$830	\$5,830	7.0	\$830	\$5,830	7.0
Tony Canale Park	\$140	\$1,100	7.9	\$1,570	\$60,510	38.5
Veterans Memorial Park	\$2,370	\$12,150	5.1	\$8,680	\$408,460	47.1
Historical Society Museum and Library	\$430	\$2,920	6.8	\$460	\$3,910	8.5

Ambulance Building



	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)		Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
	Lighting Upgrades		14,065	2.5	0.0	\$2,283.58	\$6,629.37	\$625.00	\$6,004.37	2.6	14,164
ECM 1	Install LED Fix tures	Yes	3,894	0.6	0.0	\$632.14	\$2,318.09	\$340.00	\$1,978.09	3.1	3,921
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	8,055	1.6	0.0	\$1,307.71	\$3,661.00	\$260.00	\$3,401.00	2.6	8,111
ECM 3	Retrofit Fixtures with LED Lamps	Yes	1,819	0.3	0.0	\$295.38	\$542.72	\$25.00	\$517.72	1.8	1,832
ECM 4	Install LED Exit Signs	Yes	298	0.0	0.0	\$48.36	\$107.56	\$0.00	\$107.56	2.2	300
	Lighting Control Measures		1,577	0.2	0.0	\$256.03	\$1,482.00	\$185.00	\$1,297.00	5.1	1,588
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	1,051	0.2	0.0	\$170.70	\$1,392.00	\$140.00	\$1,252.00	7.3	1,059
ECM 6	Install Daylight Dimming Controls	Yes	526	0.0	0.0	\$85.33	\$90.00	\$45.00	\$45.00	0.5	529
	Gas Heating (HVAC/Process) Replacement		0	0.0	37.7	\$362.69	\$3,971.79	\$1,500.00	\$2,471.79	6.8	4,416
ECM 7	Install Low-Intensity Infrared Heating	Yes	0	0.0	37.7	\$362.69	\$3,971.79	\$1,500.00	\$2,471.79	6.8	4,416
	Domestic Water Heating Upgrade		0	0.0	0.7	\$6.56	\$21.51	\$0.00	\$21.51	3.3	80
ECM 8	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	0.7	\$6.56	\$21.51	\$0.00	\$21.51	3.3	80
	Plug Load Equipment Control - Vending Machine		1,612	0.0	0.0	\$261.69	\$230.00	\$0.00	\$230.00	0.9	1,623
ECM 9	Vending Machine Control	Yes	1,612	0.0	0.0	\$261.69	\$230.00	\$0.00	\$230.00	0.9	1,623
	TOTALS		17,254	2.8	38.4	\$3,170.55	\$12,334.67	\$2,310.00	\$10,024.67	3.2	21,870

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P.A.L. Building at 6 Atlas Lane



	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	(kW)	Savings (MMBtu)	(\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Period (yrs)**	CO₂e Emissions Reduction (lbs)
	Lighting Upgrades		3,409	0.6	0.0	\$622.10	\$1,794.81	\$130.00	\$1,664.81	2.7	3,433
ECM 1	Retrofit Fluorescent Fix tures with LED Lamps and Drivers	Yes	1,902	0.5	0.0	\$347.13	\$1,521.00	\$130.00	\$1,391.00	4.0	1,915
ECM 2	Retrofit Fix tures with LED Lamps	Yes	1,507	0.1	0.0	\$274.97	\$273.81	\$0.00	\$273.81	1.0	1,517
	Lighting Control Measures		403	0.1	0.0	\$73.57	\$798.00	\$75.00	\$723.00	9.8	406
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	280	0.1	0.0	\$51.19	\$618.00	\$75.00	\$543.00	10.6	282
ECM 4	Install Daylight Dimming Controls	Yes	123	0.0	0.0	\$22.38	\$180.00	\$0.00	\$180.00	8.0	123
	Gas Heating (HVAC/Process) Replacement		0	0.0	14.6	\$195.66	\$5,664.33	\$400.00	\$5,264.33	26.9	1,710
	Install High Efficiency Furnaces	No	0	0.0	14.6	\$195.66	\$5,664.33	\$400.00	\$5,264.33	26.9	1,710
	HVAC System Improvements		0	0.0	7.9	\$105.33	\$329.87	\$0.00	\$329.87	3.1	921
ECM 5	Install Programmable Thermostats	Yes	0	0.0	7.9	\$105.33	\$329.87	\$0.00	\$329.87	3.1	921
	Domestic Water Heating Upgrade		0	0.0	0.2	\$2.18	\$7.17	\$0.00	\$7.17	3.3	19
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	0.2	\$2.18	\$7.17	\$0.00	\$7.17	3.3	19
	TOTALS		3,812	0.7	22.6	\$998.83	\$8,594.19	\$605.00	\$7,989.19	8.0	6,488

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TOTALS (High Priority Measures)	3,812	0.7	8.0	\$803.17	\$2,929.85	\$205.00	\$2,724.85	3.4	4,778

P.A.L Building at 2020 Leap St.



	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Energy Cost Savings	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO ₂ e Emissions Reduction (lbs)
	Lighting Upgrades		770	1.2	0.0	\$155.18	\$4,362.15	\$1,060.00	\$3,302.15	21.3	775
ECM 1	Install LED Fixtures	Yes	492	0.7	0.0	\$99.20	\$3,125.42	\$800.00	\$2,325.42	23.4	495
ECM 2	Retrofit Fixtures with LED Lamps	Yes	278	0.5	0.0	\$55.98	\$1,236.73	\$260.00	\$976.73	17.4	280
	TOTALS		770	1.2	0.0	\$155.18	\$4,362.15	\$1,060.00	\$3,302.15	21.3	775

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P.A.L Building at 2590 Ridge Ave.



	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)		· ·	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO ₂ e Emissions Reduction (lbs)
	Lighting Upgrades		26,141	7.7	0.0	\$4,729.06	\$35,755.11	\$4,195.00	\$31,560.11	6.7	26,324
ECM 1	Install LED Fixtures	Yes	16,005	3.5	0.0	\$2,895.30	\$26,854.89	\$3,000.00	\$23,854.89	8.2	16,116
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	5,699	1.7	0.0	\$1,031.03	\$4,003.17	\$400.00	\$3,603.17	3.5	5,739
ECM 3	Retrofit Fixtures with LED Lamps	Yes	4,437	2.4	0.0	\$802.73	\$4,897.06	\$795.00	\$4,102.06	5.1	4,468
	Lighting Control Measures		999	0.3	0.0	\$180.71	\$1,350.00	\$175.00	\$1,175.00	6.5	1,006
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	999	0.3	0.0	\$180.71	\$1,350.00	\$175.00	\$1,175.00	6.5	1,006
	Electric Unitary HVAC Measures		1,218	0.6	0.0	\$220.34	\$4,488.66	\$276.00	\$4,212.66	19.1	1,226
	Install High Efficiency Electric AC	No	1,218	0.6	0.0	\$220.34	\$4,488.66	\$276.00	\$4,212.66	19.1	1,226
	Domestic Water Heating Upgrade		3,680	1.4	-11.6	\$534.51	\$2,551.48	\$300.00	\$2,251.48	4.2	2,345
ECM 5	Install Tankless Water Heater	Yes	3,680	1.4	-12.6	\$523.95	\$2,522.80	\$300.00	\$2,222.80	4.2	2,235
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	0.9	\$10.56	\$28.68	\$0.00	\$28.68	2.7	110
	TOTALS		32,038	9.9	-11.6	\$5,664.61	\$44,145.25	\$4,946.00	\$39,199.25	6.9	30,901

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TOTALS (High Priority Measures)	30,820	9.4	-11.6	\$5,444.28	\$39,656.59	\$4,670.00	\$34,986.59	6.4	29,675

P.A.L. Building at 2594 Tilton Rd.



	Energy Conservation Measure Lighting Upgrades	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$) \$997.23	Estimated Install Cost (\$) \$7,957.12	Estimated Incentive (\$)*	Estimated Net Cost (\$) \$6,947.12	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
ECM 1	Install LED Fixtures	Yes	256	0.1	0.0	\$51.59	\$781.35	\$200.00	\$581.35	11.3	258
				***		·				+	
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	4,224	3.2	0.0	\$851.78	\$6,149.67	\$760.00	\$5,389.67	6.3	4,254
ECM 3	Retrofit Fixtures with LED Lamps	Yes	343	0.4	0.0	\$69.14	\$918.55	\$50.00	\$868.55	12.6	345
ECM 4	Install LED Exit Signs	Yes	123	0.0	0.0	\$24.73	\$107.56	\$0.00	\$107.56	4.3	123
	Lighting Control Measures		264	0.2	0.0	\$53.33	\$540.00	\$70.00	\$470.00	8.8	266
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	264	0.2	0.0	\$53.33	\$540.00	\$70.00	\$470.00	8.8	266
	Electric Unitary HVAC Measures		5,060	3.6	0.0	\$1,020.34	\$23,991.80	\$920.00	\$23,071.80	22.6	5,096
	Install High Efficiency Heat Pumps	No	5,060	3.6	0.0	\$1,020.34	\$23,991.80	\$920.00	\$23,071.80	22.6	5,096
	Domestic Water Heating Upgrade		234	0.5	-0.4	\$42.41	\$537.14	\$300.00	\$237.14	5.6	188
ECM 6	Install Tankless Water Heater	Yes	234	0.5	-0.8	\$37.85	\$522.80	\$300.00	\$222.80	5.9	142
ECM 7	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	0.4	\$4.57	\$14.34	\$0.00	\$14.34	3.1	46
	TOTALS		10,505	8.0	-0.4	\$2,113.31	\$33,026.06	\$2,300.00	\$30,726.06	14.5	10,530

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

TOTAL C (III of Description Management)	E 444	4.4	0.4	£4,000,00	£0.024.0C	£4 200 00	67 CE4 OC	7.0	E 40E
TOTALS (High Priority Measures)	5,444	4.4	-0.4	\$1,092.98	\$9,034.20	\$1,380.00	\$7,004.20	7.0	5,435

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		155,320	39.3	0.0	\$20,787.01	\$113,182.88	\$11,810.00	\$101,372.88	4.9	156,406
ECM 1 Install LED Fixtures	Yes	26,270	4.0	0.0	\$3,515.80	\$12,566.98	\$2,310.00	\$10,256.98	2.9	26,454
ECM 2 Retrofit Fluorescent Fix tures with LED Lamps and Drivers	Yes	53,967	17.3	0.0	\$7,222.59	\$37,122.33	\$4,070.00	\$33,052.33	4.6	54,344
ECM 3 Retrofit Fixtures with LED Lamps	Yes	71,833	17.7	0.0	\$9,613.67	\$57,793.16	\$5,430.00	\$52,363.16	5.4	72,336
ECM 4 Install LED Exit Signs	Yes	3,250	0.3	0.0	\$434.95	\$5,700.42	\$0.00	\$5,700.42	13.1	3,273
Lighting Control Measures		26,748	5.7	0.0	\$3,579.71	\$16,708.00	\$6,150.00	\$10,558.00	2.9	26,935
ECM 5 Install Occupancy Sensor Lighting Controls	Yes	14,552	4.0	0.0	\$1,947.49	\$10,628.00	\$1,740.00	\$8,888.00	4.6	14,653
ECM 6 Install Daylight Dimming Controls	Yes	7,575	1.0	0.0	\$1,013.73	\$1,680.00	\$280.00	\$1,400.00	1.4	7,628
ECM 7 Install High/Low Lighitng Controls	Yes	4,621	0.6	0.0	\$618.49	\$4,400.00	\$4,130.00	\$270.00	0.4	4,654
Motor Upgrades		5,757	0.5	0.0	\$770.41	\$7,807.64	\$0.00	\$7,807.64	10.1	5,797
ECM 8 Premium Efficiency Motors	Yes	5,757	0.5	0.0	\$770.41	\$7,807.64	\$0.00	\$7,807.64	10.1	5,797
Variable Frequency Drive (VFD) Measures		5,972	1.3	0.0	\$799.21	\$6,551.70	\$0.00	\$6,551.70	8.2	6,013
ECM 9 Install VFDs on Hot Water Pumps	Yes	5,972	1.3	0.0	\$799.21	\$6,551.70	\$0.00	\$6,551.70	8.2	6,013
Electric Unitary HVAC Measures		3,537	1.1	0.0	\$473.33	\$15,882.72	\$644.00	\$15,238.72	32.2	3,561
Install High Efficiency Electric AC	No	3,537	1.1	0.0	\$473.33	\$15,882.72	\$644.00	\$15,238.72	32.2	3,561
HVAC System Improvements		2,288	0.5	0.0	\$306.21	\$1,000.00	\$500.00	\$500.00	1.6	2,304
Install Dual Enthalpy Outside Economizer Control	No	2,288	0.5	0.0	\$306.21	\$1,000.00	\$500.00	\$500.00	1.6	2,304
Domestic Water Heating Upgrade		7,277	2.7	-22.3	\$791.63	\$8,637.52	\$600.00	\$8,037.52	10.2	4,722
ECM 10 Install Tankless Water Heater	Yes	6,780	2.7	-23.1	\$717.93	\$8,522.80	\$600.00	\$7,922.80	11.0	4,119
ECM 11 Install Low-Flow Domestic Hot Water Devices	Yes	497	0.0	0.9	\$73.69	\$114.72	\$0.00	\$114.72	1.6	603
Plug Load Equipment Control - Vending Machine		4,836	0.0	0.0	\$647.15	\$690.00	\$0.00	\$690.00	1.1	4,869
ECM 12 Vending Machine Control	Yes	4,836	0.0	0.0	\$647.15	\$690.00	\$0.00	\$690.00	1.1	4,869
Custom Measures		43,193	0.0	29.6	\$6,022.97	\$152,271.25	\$0.00	\$152,271.25	25.3	46,960
Installation of an Energy Management System	No	36,311	0.0	29.6	\$5,101.91	\$147,446.25	\$0.00	\$147,446.25	28.9	40,029
ECM 13 Computer Power Management Software	Yes	6,882	0.0	0.0	\$921.06	\$4,825.00	\$0.00	\$4,825.00	5.2	6,930
TOTALS		254,926	51.1	7.3	\$34,177.64	\$322,731.71	\$19,704.00	\$303,027.71	8.9	257,568

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TOTALS (High Priority Measures)	212,791	49.4	-22.3	\$28,296.18	\$158,402.74	\$18,560.00	\$139,842.74	4.9	211,673	
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Public Works Building



Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	(kW)	Annual Fuel Savings (MMBtu)	(\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Period (yrs)**	Emissions Reduction (lbs)
Lighting Upgrades	V	40,857	11.2	0.0	\$6,874.93	\$87,642.61	\$6,585.00	\$81,057.61	11.8	41,142
ECM 1 Install LED Fixtures	Yes	30,186	7.9	0.0	\$5,079.34	\$79,923.26	\$5,950.00	\$73,973.26	14.6	30,397
ECM 2 Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	9,476	3.0	0.0	\$1,594.48	\$6,840.17	\$585.00	\$6,255.17	3.9	9,542
ECM 3 Retrofit Fixtures with LED Lamps	Yes	801	0.2	0.0	\$134.79	\$556.52	\$50.00	\$506.52	3.8	807
ECM 4 Install LED Exit Signs	Yes	394	0.0	0.0	\$66.33	\$322.67	\$0.00	\$322.67	4.9	397
Lighting Control Measures		836	0.3	0.0	\$140.68	\$464.00	\$80.00	\$384.00	2.7	842
ECM 5 Install Occupancy Sensor Lighting Controls	Yes	836	0.3	0.0	\$140.68	\$464.00	\$80.00	\$384.00	2.7	842
Electric Unitary HVAC Measures		918	0.6	0.0	\$154.47	\$4,537.92	\$184.00	\$4,353.92	28.2	924
Install High Efficiency Electric AC	No	918	0.6	0.0	\$154.47	\$4,537.92	\$184.00	\$4,353.92	28.2	924
HVAC System Improvements		95	0.0	33.5	\$365.65	\$989.61	\$0.00	\$989.61	2.7	4,015
ECM 6 Install Programmable Thermostats	Yes	95	0.0	33.5	\$365.65	\$989.61	\$0.00	\$989.61	2.7	4,015
Domestic Water Heating Upgrade		0	0.0	0.7	\$6.92	\$28.68	\$0.00	\$28.68	4.1	78
ECM 7 Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	0.7	\$6.92	\$28.68	\$0.00	\$28.68	4.1	78
Plug Load Equipment Control - Vending Machine		1,612	0.0	0.0	\$271.22	\$230.00	\$0.00	\$230.00	0.8	1,623
ECM 8 Vending Machine Control	Yes	1,612	0.0	0.0	\$271.22	\$230.00	\$0.00	\$230.00	0.8	1,623
TOTALS		44,318	12.0	34.1	\$7,813.88	\$93,892.82	\$6,849.00	\$87,043.82	11.1	48,624

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

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TOTALS (High Priority Measures)	43,400	11.5	34.1	\$7,659.41	\$89,354.90	\$6,665.00	\$82,689.90	10.8	47,700

Community Center



	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)		Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO₂e Emissions Reduction (lbs)
	Lighting Upgrades	88,258	17.5	0.0	\$12,245.57	\$63,906.05	\$10,455.00	\$53,451.05	4.4	88,875
ECM 1	Install LED Fixtures	11,407	2.3	0.0	\$1,582.63	\$16,799.11	\$4,300.00	\$12,499.11	7.9	11,486
ECM 2	Retrofit Fixtures with LED Lamps	76,851	15.2	0.0	\$10,662.94	\$47,106.94	\$6,155.00	\$40,951.94	3.8	77,389
	Lighting Control Measures	16,576	3.5	0.0	\$2,299.90	\$18,820.00	\$1,920.00	\$16,900.00	7.3	16,692
ECM 3	Install Occupancy Sensor Lighting Controls	12,652	3.0	0.0	\$1,755.50	\$14,620.00	\$1,920.00	\$12,700.00	7.2	12,741
ECM 4	Install High/Low Lighitng Controls	3,924	0.5	0.0	\$544.41	\$4,200.00	\$0.00	\$4,200.00	7.7	3,951
	Custom Measures	69,578	0.0	386.8	\$14,596.63	\$101,908.80	\$0.00	\$101,908.80	7.0	115,357
ECM 5	Retro-Commissioning Study & HVAC Improvements	23,193	0.0	128.9	\$4,865.54	\$16,984.80	\$0.00	\$16,984.80	3.5	38,452
ECM 6	Installation of an Energy Management System	46,385	0.0	257.9	\$9,731.08	\$84,924.00	\$0.00	\$84,924.00	8.7	76,905
	TOTALS	174,412	21.0	386.8	\$29,142.10	\$184,634.85	\$12,375.00	\$172,259.85	5.9	220,924

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Childs Kirk Memorial Park



	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	_	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO ₂ e Emissions Reduction (lbs)
	Lighting Upgrades		4,365	1.2	0.0	\$920.14	\$104,025.00	\$750.00	\$103,275.00	112.2	4,395
	Install LED Fixtures	No	1,775	0.0	0.0	\$374.17	\$100,000.00	\$250.00	\$99,750.00	266.6	1,787
ECM 1	Retrofit Fixtures with LED Lamps	Yes	2,590	1.2	0.0	\$545.97	\$4,025.00	\$500.00	\$3,525.00	6.5	2,608
	Lighting Control Measures		289	0.2	0.0	\$61.01	\$1,350.00	\$175.00	\$1,175.00	19.3	291
	Install Occupancy Sensor Lighting Controls	No	289	0.2	0.0	\$61.01	\$1,350.00	\$175.00	\$1,175.00	19.3	291
	Food Service Equipment & Refrigeration Measures		1,328	0.2	0.0	\$279.99	\$2,300.00	\$0.00	\$2,300.00	8.2	1,338
ECM 2	Replace Refrigeration Equipment	Yes	1,328	0.2	0.0	\$279.99	\$2,300.00	\$0.00	\$2,300.00	8.2	1,338
	TOTALS (High Priority Measures)		3,918	1.3	0.0	\$825.96	\$6,325.00	\$500.00	\$5,825.00	7.1	3,946

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

Tony Canale Park



	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Energy Cost Savings	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO ₂ e Emissions Reduction (lbs)
	Lighting Upgrades		6,471	0.4	0.0	\$1,513.41	\$60,800.51	\$590.00	\$60,210.51	39.8	6,516
	Install LED Fixtures	No	6,117	0.0	0.0	\$1,430.66	\$59,805.44	\$390.00	\$59,415.44	41.5	6,160
ECM 1	Retrofit Fixtures with LED Lamps	Yes	354	0.4	0.0	\$82.75	\$995.07	\$200.00	\$795.07	9.6	356
	HVAC System Improvements		109	0.0	0.0	\$25.49	\$261.00	\$0.00	\$261.00	10.2	110
ECM 2	Install Pipe Insulation	Yes	109	0.0	0.0	\$25.49	\$261.00	\$0.00	\$261.00	10.2	110
	Domestic Water Heating Upgrade		130	0.0	0.0	\$30.37	\$43.02	\$0.00	\$43.02	1.4	131
ECM 3	Install Low-Flow Domestic Hot Water Devices	Yes	130	0.0	0.0	\$30.37	\$43.02	\$0.00	\$43.02	1.4	131
	TOTALS		6,710	0.4	0.0	\$1,569.27	\$61,104.53	\$590.00	\$60,514.53	38.6	6,756

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

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

Veterans Memorial Park



	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)**	CO₂e Emissions Reduction (lbs)
	Lighting Upgrades		46,514	3.8	0.0	\$8,124.23	\$407,403.48	\$2,120.00	\$405,283.48	49.9	46,839
	Install LED Fixtures	No	36,117	0.0	0.0	\$6,308.21	\$397,364.48	\$1,050.00	\$396,314.48	62.8	36,369
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	6,055	2.8	0.0	\$1,057.63	\$5,340.50	\$660.00	\$4,680.50	4.4	6,098
ECM 2	Retrofit Fixtures with LED Lamps	Yes	4,342	1.0	0.0	\$758.38	\$4,698.50	\$410.00	\$4,288.50	5.7	4,372
	Lighting Control Measures		621	0.2	0.0	\$108.41	\$1,080.00	\$140.00	\$940.00	8.7	625
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	621	0.2	0.0	\$108.41	\$1,080.00	\$140.00	\$940.00	8.7	625
	Domestic Water Heating Upgrade		1,010	0.0	0.0	\$176.40	\$86.04	\$0.00	\$86.04	0.5	1,017
ECM 4	Install Low-Flow Domestic Hot Water Devices	Yes	1,010	0.0	0.0	\$176.40	\$86.04	\$0.00	\$86.04	0.5	1,017
	Food Service Equipment & Refrigeration Measures		1,561	0.2	0.0	\$272.60	\$2,150.00	\$0.00	\$2,150.00	7.9	1,572
ECM 5	Replace Refrigeration Equipment	Yes	1,561	0.2	0.0	\$272.60	\$2,150.00	\$0.00	\$2,150.00	7.9	1,572
	TOTALS		49,705	4.1	0.0	\$8,681.65	\$410,719.52	\$2,260.00	\$408,459.52	47.0	50,053

^{* -} 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).

TOTALS (High Priority Measures)	13,589	4.1	0.0	\$2,373.43	\$13,355.04	\$1,210.00	\$12,145.04	5.1	13,684

^{* -} 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).

Historical Society Museum and Library



	Energy Conservation Measure	Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	· ·	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)		CO ₂ e Emissions Reduction (lbs)
	Lighting Upgrades		2,278	1.6	0.0	\$425.55	\$3,127.23	\$225.00	\$2,902.23	6.8	2,294
ECM 1	Install LED Fixtures	Yes	602	0.1	0.0	\$112.36	\$564.48	\$10.00	\$554.48	4.9	606
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,677	1.4	0.0	\$313.19	\$2,562.75	\$215.00	\$2,347.75	7.5	1,688
	HVAC System Improvements		148	0.0	0.0	\$27.64	\$989.61	\$0.00	\$989.61	35.8	149
	Install Programmable Thermostats	No	148	0.0	0.0	\$27.64	\$989.61	\$0.00	\$989.61	35.8	149
	Domestic Water Heating Upgrade		50	0.0	0.0	\$9.43	\$21.51	\$0.00	\$21.51	2.3	51
ECM 3	Install Low-Flow Domestic Hot Water Devices	Yes	50	0.0	0.0	\$9.43	\$21.51	\$0.00	\$21.51	2.3	51
	TOTALS		2,477	1.6	0.0	\$462.62	\$4,138.35	\$225.00	\$3,913.35	8.5	2,494

^{* -} 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).

TOTALS (High Priority Measures)	2,329	1.6	0.0	\$434.99	\$3,148.74	\$225.00	\$2,923.74	6.7	2,345
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^{* -} 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 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

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







FOR MORE INFORMATION

Visit NJCleanEnergy.com
Call (866) NJSMART

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