New Jersey's Clean Energy Program

LGEA Presentation

Mercer County

December 14, 2020





INTRODUCTIONS

- Mercer County
 - Joe Pizza Mercer County Parks Deputy Director
 - Rob Doherty Mercer County Park General Supervisor
 - Leslie Floyd, PP, AICP Mercer County Planning Director
 - Regine Delcy, PP, AICP Senior Planner
- NJ Clean Energy Program
 - Aimee Lalonde TRC Program Manager
 - Yagna Otia TRC Auditor
 - Sarah Walters TRC Account Manager
 - Tony O'Donnell TRC Outreach Manager
 - Michelle Rossi ESIP Coordinator (BPU)



Agenda

- The audit process overview
- Energy use & existing conditions
- Review of Energy Conservation Measures (ECMs) identified & other recommendations
- Energy Savings Improvement Program (ESIP)
- Overview of NJCEP equipment incentives
- Questions regarding the draft audit report
- Next steps for Mercer County



LGEA PROCESS

Application Approval

Scheduling Call

Audit

Benchmarking & Analysis

Draft Report

LGEA Presentation

Final Report



SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Kitchen Equipment

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Fuel Oil Consumption and Costs
- Propane Consumption and Costs



Sites Visited/Analyzed

- Park Recreation & Events Staff Building
- Maintenance Building
- Mercer County Park Tennis Center & Hall of Fame
- Marina & Boat House
- Ice Skating Rink
- Princeton Country Club
- Mountain View Golf Course Clubhouse
- Wildlife Center
- Mercer Oaks Gold Course Clubhouse
- Tulpehaking Nature Center
- Howell Farm Visitor's Center
- Arm & Hammer Park at the Waterfront
- Equestrian Center
 - Main Barn
 - Director's House
 - Lower Barn
 - Master Gardner Shed
 - Temporary Trailer
 - Garage

UTILITY BREAKOUT

Percent of Total Annual Energy Costs



UTILITY BREAKOUT

Pre & Post Implementation Cost





Benchmarking



BENCHMARKING





ALL OPPORTUNITIES

Savings Potential





- Lighting Control Measures
- Motor Upgrades
- Variable Frequency Drive (VFD) Measures
- Electric Unitary HVAC Measures
- Electric Chiller Replacement
- Gas Heating (HVAC/Process) Replacement
- HVAC System Improvements
- Domestic Water Heating Upgrade
- Food Service & Refrigeration Measures



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)**	CO₂e Emissions Reduction (Ibs)
Lighting	Upgrades	678,257	132.7	-143.5	\$103,187	\$510,084	\$93,208	\$416,876	4.0	662,373
ECM 1	Install LED Fixtures	471,219	79.2	-97.6	\$73,415	\$435,500	\$68,610	\$366,890	5.0	459,825
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	64,626	17.2	-14.4	\$8,395	\$21,857	\$6,802	\$15,055	1.8	63,335
ECM 3	Retrofit Fixtures with LED Lamps	137,522	35.9	-30.1	\$20,710	\$50,120	\$17,796	\$32,324	1.6	134,443
ECM 4	Install LED Exit Signs	4,890	0.5	-1.2	\$668	\$2,607	\$0	\$2,607	3.9	4,769
Lighting	Control Measures	59,587	15.2	-14.0	\$8,350	\$72,562	\$29,980	\$42,582	5.1	58,180
ECM 5	Install Occupancy Sensor Lighting Controls	44,525	11.9	-10.7	\$6,260	\$54,412	\$13,770	\$40,642	6.5	43,446
ECM 6	Install Daylight Dimming/Photocell Controls	723	0.0	0.0	\$93	\$600	\$0	\$600	6.4	728
ECM 7	Install High/Low Lighting Controls	14,338	3.3	-3.3	\$1,997	\$17,550	\$16,210	\$1,340	0.7	14,005
Motor L	pgrades	939	0.2	0.0	\$161	\$2,401	\$0	\$2,401	14.9	945
ECM 8	Premium Efficiency Motors	939	0.2	0.0	\$161	\$2,401	\$0	\$2,401	14.9	945
Variable	Frequency Drive (VFD) Measures	93,800	23.7	0.0	\$11,903	\$90,982	\$11,550	\$79,432	6.7	94,456
ECM 9	Install VFD on Variable Air Volume (VAV) Fans	73,109	13.7	0.0	\$9,645	\$58,536	\$5,150	\$53,386	5.5	73,621
ECM 10	Install VFDs on Constant Volume (CV) Fans	5,148	1.7	0.0	\$770	\$7,768	\$800	\$6,968	9.0	5,184
ECM 11	Install VFDs on Chilled Water Pumps	13,897	7.8	0.0	\$1,331	\$17,432	\$5,200	\$12,232	9.2	13,995
ECM 12	Install VFDs on Heating Water Pumps	1,646	0.5	0.0	\$158	\$7,246	\$400	\$6,846	43.5	1,657
Electric	Jnitary HVAC Measures	12,897	6.7	0.0	\$2,166	\$71,644	\$9,502	\$62,142	28.7	12,987
ECM 13	Install High Efficiency Air Conditioning Units	12,897	6.7	0.0	\$2,166	\$71,644	\$9,502	\$62,142	28.7	12,987
Electric	Chiller Replacement	123,060	68.7	0.0	\$11,783	\$85,210	\$1,820	\$83,390	7.1	123,920
ECM 14	Install High Efficiency Chillers	123,060	68.7	0.0	\$11,783	\$85,210	\$1,820	\$83,390	7.1	123,920



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 (Ibs)
Gas Hea	ting (HVAC/Process) Replacement	0	0.0	4.8	\$65	\$816	\$800	\$16	0.2	677
ECM 15	Install High Efficiency Furnaces	0	0.0	4.8	\$65	\$816	\$800	\$16	0.2	677
HVAC Sy	stem Improvements	2,937	0.0	84.8	\$1,509	\$6,100	\$328	\$5,772	3.8	15,416
ECM 16	Install Programmable Thermostats	186	0.0	5.2	\$73	\$10	\$0	\$10	0.1	797
ECM 17	Implement Demand Control Ventilation (DCV)	2,617	0.0	27.0	\$696	\$5,438	\$0	\$5 <i>,</i> 438	7.8	6,466
ECM 18	Install Pipe Insulation	135	0.0	52.6	\$740	\$653	\$328	\$325	0.4	8,153
Domest	ic Water Heating Upgrade	6,593	0.0	100.4	\$1,905	\$40,290	\$2,172	\$38,118	20.0	18,587
ECM 19	Install High Efficiency Gas-Fired Water Heater	0	0.0	44.6	\$365	\$36,005	\$0	\$36,005	98.7	5,220
ECM 20	Install Low-Flow DHW Devices	6,593	0.0	55.8	\$1,540	\$4,284	\$2,172	\$2,113	1.4	13,367
Food Se	rvice & Refrigeration Measures	116,287	10.2	0.0	\$15,900	\$59,421	\$8,160	\$51,261	3.2	117,100
ECM 21	Refrigerator/Freezer Case Electrically Commutated Motors	43,418	5.2	0.0	\$5,840	\$11,222	\$2,960	\$8,262	1.4	43,722
ECM 22	Refrigeration Controls	44,892	1.8	0.0	\$6,170	\$36,592	\$3,600	\$32,992	5.3	45,206
ECM 23	Replace Refrigeration Equipment	12,040	1.4	0.0	\$1,509	\$8,617	\$600	\$8,017	5.3	12,124
ECM 24	Vending Machine Control	15,937	1.8	0.0	\$2,381	\$2,990	\$1,000	\$1,990	0.8	16,049
	TOTALS	1,094,357	257.5	32.5	\$156,929	\$939,510	\$157,520	\$781,990	5.0	1,104,642

* - 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.



COST EFFECTIVE OPPORTUNITIES

Savings Potential





- Lighting Control Measures
- Variable Frequency Drive (VFD) Measures
- Electric Chiller Replacement
- Gas Heating (HVAC/Process) Replacement
- HVAC System Improvements
- Domestic Water Heating Upgrade
- Food Service & Refrigeration Measures



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 (Ibs)
Lighting	Upgrades	678,257	132.7	-143.5	\$103,187	\$510,084	\$93,208	\$416,876	4.0	662,373
ECM 1	Install LED Fixtures	471,219	79.2	-97.6	\$73,415	\$435,500	\$68,610	\$366,890	5.0	459,825
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	64,626	17.2	-14.4	\$8,395	\$21,857	\$6,802	\$15,055	1.8	63,335
ECM 3	Retrofit Fixtures with LED Lamps	137,522	35.9	-30.1	\$20,710	\$50,120	\$17,796	\$32,324	1.6	134,443
ECM 4	Install LED Exit Signs	4,890	0.5	-1.2	\$668	\$2,607	\$0	\$2,607	3.9	4,769
Lighting	Control Measures	57,403	14.0	-13.1	\$8,112	\$65,314	\$27,915	\$37,399	4.6	56,129
ECM 5	Install Occupancy Sensor Lighting Controls	42,447	10.8	-9.8	\$6,035	\$47,614	\$11,930	\$35,684	5.9	41,496
ECM 6	Install Daylight Dimming/Photocell Controls	723	0.0	0.0	\$93	\$600	\$0	\$600	6.4	728
ECM 7	Install High/Low Lighting Controls	14,232	3.2	-3.3	\$1,983	\$17,100	\$15,985	\$1,115	0.6	13,905
Variable	Frequency Drive (VFD) Measures	19,045	9.5	0.0	\$2,101	\$25,200	\$6,000	\$19,200	9.1	19,179
ECM 9	Install VFD on Variable Air Volume (VAV) Fans	0	0.0	0.0	\$0	\$0	\$0	\$0	0.0	0
ECM 10	Install VFDs on Constant Volume (CV) Fans	5,148	1.7	0.0	\$770	\$7,768	\$800	\$6,968	9.0	5,184
ECM 11	Install VFDs on Chilled Water Pumps	13,897	7.8	0.0	\$1,331	\$17,432	\$5,200	\$12,232	9.2	13,995
Electric	Chiller Replacement	123,060	68.7	0.0	\$11,783	\$85,210	\$1,820	\$83,390	7.1	123,920
ECM 14	Install High Efficiency Chillers	123,060	68.7	0.0	\$11,783	\$85,210	\$1,820	\$83,390	7.1	123,920



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)**	CO2e Emissions Reduction (Ibs)
Gas Hea	ting (HVAC/Process) Replacement	0	0.0	4.8	\$65	\$816	\$800	\$16	0.2	677
ECM 15	Install High Efficiency Furnaces	0	0.0	4.8	\$65	\$816	\$800	\$16	0.2	677
HVAC Sy	stem Improvements	2,937	0.0	84.8	\$1,509	\$6,100	\$328	\$5,772	3.8	15,416
ECM 16	Install Programmable Thermostats	186	0.0	5.2	\$73	\$10	\$0	\$10	0.1	797
ECM 17	Implement Demand Control Ventilation (DCV)	2,617	0.0	27.0	\$696	\$5,438	\$0	\$5,438	7.8	6,466
ECM 18	Install Pipe Insulation	135	0.0	52.6	\$740	\$653	\$328	\$325	0.4	8,153
Domest	ic Water Heating Upgrade	6,593	0.0	55.8	\$1,540	\$4,284	\$2,172	\$2,113	1.4	13,367
ECM 20	Install Low-Flow DHW Devices	6,593	0.0	55.8	\$1,540	\$4,284	\$2,172	\$2,113	1.4	13,367
Food Se	rvice & Refrigeration Measures	109,014	10.0	0.0	\$14,940	\$37,777	\$6,060	\$31,717	2.1	109,776
ECM 21	Refrigerator/Freezer Case Electrically Commutated Motors	43,418	5.2	0.0	\$5 <i>,</i> 840	\$11,222	\$2,960	\$8,262	1.4	43,722
ECM 22	Refrigeration Controls	37,618	1.6	0.0	\$5,210	\$14,948	\$1,500	\$13,448	2.6	37,881
ECM 23	Replace Refrigeration Equipment	12,040	1.4	0.0	\$1,509	\$8,617	\$600	\$8,017	5.3	12,124
ECM 24	Vending Machine Control	15,937	1.8	0.0	\$2,381	\$2,990	\$1,000	\$1,990	0.8	16,049
	TOTALS	996,309	235.0	-11.1	\$143,237	\$734,786	\$138,303	\$596,483	4.2	1,000,836

* - 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.



REC & STAFF BUILDING

#	Energy Conservation Measure	Cost Effective?	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 (Ibs)
Lighting	Upgrades		3,301	0.9	-1	\$489	\$1,223	\$610	\$613	1.3	3,105
ECM 1	Retrofit Fixtures with LED Lamps	Yes	3,301	0.9	-1	\$489	\$1,223	\$610	\$613	1.3	3,105
Lighting	Control Measures		961	0.2	0	\$142	\$1,620	\$420	\$1,200	8.4	902
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	961	0.2	0	\$142	\$1,620	\$420	\$1,200	8.4	902
HVAC S	ystem Improvements		135	0.0	10	\$174	\$157	\$88	\$69	0.4	1,813
ECM 3	Install Pipe Insulation	Yes	135	0.0	10	\$174	\$157	\$88	\$69	0.4	1,813
Domest	ic Water Heating Upgrade		221	0.0	0	\$34	\$14	\$14	\$0	0.0	222
ECM 4	Install Low-Flow DHW Devices	Yes	221	0.0	0	\$34	\$14	\$14	\$0	0.0	222
	TOTALS (COST EFFECTIVE MEASURES)		4,618	1.1	9	\$839	\$3,014	\$1,132	\$1,882	2.2	6,042
	TOTALS (ALL MEASURES)		4,618	1.1	9	\$839	\$3,014	\$1,132	\$1,882	2.2	6,042

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



MAINTENANCE BUILDING

#	Energy Conservation Measure	Cost Effective?	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		6,900	1.5	-3	\$1,077	\$3,063	\$1,280	\$1,783	1.7	6,590
ECM 1	Install LED Fixtures	Yes	1,109	0.1	0	\$177	\$897	\$420	\$477	2.7	1,102
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	759	0.2	0	\$118	\$344	\$100	\$244	2.1	719
ECM 3	Retrofit Fixtures with LED Lamps	Yes	4,078	1.0	-2	\$634	\$1,388	\$760	\$628	1.0	3,865
ECM 4	Install LED Exit Signs	Yes	954	0.1	0	\$148	\$434	\$0	\$434	2.9	904
Lighting	Control Measures		3,524	1.0	-1	\$548	\$2,925	\$785	\$2,140	3.9	3,340
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	3,334	0.9	-1	\$518	\$2,700	\$560	\$2,140	4.1	3,159
ECM 6	Install High/Low Lighting Controls	Yes	190	0.0	0	\$30	\$225	\$225	\$0	0.0	180
Electric	Unitary HVAC Measures		1,097	0.6	0	\$177	\$4,489	\$552	\$3,937	22.3	1,104
ECM 7	Install High Efficiency Air Conditioning Units	No	1,097	0.6	0	\$177	\$4,489	\$552	\$3,937	22.3	1,104
Gas Hea	ting (HVAC/Process) Replacement		0	0.0	5	\$65	\$816	\$800	\$16	0.2	677
ECM 8	Install High Efficiency Furnaces	Yes	0	0.0	5	\$65	\$816	\$800	\$16	0.2	677
Domest	ic Water Heating Upgrade		556	0.0	0	\$90	\$29	\$29	\$0	0.0	560
ECM 9	Install Low-Flow DHW Devices	Yes	556	0.0	0	\$90	\$29	\$29	\$0	0.0	560
Food Se	rvice & Refrigeration Measures		1,954	0.2	0	\$315	\$460	\$100	\$360	1.1	1,968
ECM 10	Vending Machine Control	Yes	1,954	0.2	0	\$315	\$460	\$100	\$360	1.1	1,968
	TOTALS (COST EFFECTIVE MEASURES)		12,934	2.7	1	\$2,094	\$7,293	\$2,994	\$4,299	2.1	13,135
	TOTALS (ALL MEASURES)		14,030	3.3	1	\$2,270	\$11,781	\$3,546	\$8,236	3.6	14,239

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

TENNIS CENTER & HALL OF FAME

#	Energy Conservation Measure	Cost Effective?	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 (Ibs)
Lighting	Upgrades		251,927	47.0	-60	\$47,808	\$141,222	\$31,474	\$109,748	2.3	245,119
ECM 1	Install LED Fixtures	Yes	243,384	43.5	-57	\$46,206	\$137,819	\$30,350	\$107,469	2.3	237,019
ECM 2	Retrofit Fixtures with LED Lamps	Yes	8,543	3.5	-4	\$1,602	\$3,402	\$1,124	\$2,278	1.4	8,100
Lighting	Control Measures		762	0.2	0	\$143	\$1,620	\$420	\$1,200	8.4	721
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	762	0.2	0	\$143	\$1,620	\$420	\$1,200	8.4	721
Domest	ic Water Heating Upgrade		1,456	0.0	0	\$281	\$197	\$138	\$59	0.2	1,466
ECM 4	Install Low-Flow DHW Devices	Yes	1,456	0.0	0	\$281	\$197	\$138	\$59	0.2	1,466
Food Se	rvice & Refrigeration Measures		5,178	0.6	0	\$998	\$920	\$300	\$620	0.6	5,214
ECM 5	Vending Machine Control	Yes	5,178	0.6	0	\$998	\$920	\$300	\$620	0.6	5,214
	TOTALS (COST EFFECTIVE MEASURES)		259,323	47.8	-61	\$49,230	\$143,959	\$32,332	\$111,627	2.3	252,521
	TOTALS (ALL MEASURES)		259,323	47.8	-61	\$49,230	\$143,959	\$32,332	\$111,627	2.3	252,521

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MARINA & BOAT HOUSE

#	Energy Conservation Measure	Cost Effective?	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		31,283	3.2	-5	\$3,795	\$8,774	\$2,884	\$5,890	1.6	30,734
ECM 1	Install LED Fixtures	Yes	17,520	0.0	0	\$2,167	\$4,653	\$1,000	\$3,653	1.7	17,643
ECM 2	Retrofit Fixtures with LED Lamps	Yes	13,763	3.2	-5	\$1,628	\$4,121	\$1,884	\$2,237	1.4	13,092
Lighting	Control Measures		952	0.2	0	\$112	\$810	\$70	\$740	6.6	900
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	952	0.2	0	\$112	\$810	\$70	\$740	6.6	900
HVAC Sy	stem Improvements		2,617	0.0	27	\$696	\$5,438	\$0	\$5,438	7.8	6,466
ECM 4	Implement Demand Control Ventilation (DCV)	Yes	2,617	0.0	27	\$696	\$5 <i>,</i> 438	\$0	\$5,438	7.8	6,466
Domest	ic Water Heating Upgrade		1,586	0.0	0	\$196	\$129	\$129	\$0	0.0	1,598
ECM 5	Install Low-Flow DHW Devices	Yes	1,586	0.0	0	\$196	\$129	\$129	\$0	0.0	1,598
Food Se	rvice & Refrigeration Measures		61,210	5.5	0	\$7,571	\$11,547	\$1,320	\$10,227	1.4	61,638
ECM 6	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	27,524	3.4	0	\$3,404	\$1,213	\$320	\$893	0.3	27,716
ECM 7	Refrigeration Controls	Yes	25,548	1.2	0	\$3,160	\$3,867	\$400	\$3,467	1.1	25,727
ECM 8	Replace Refrigeration Equipment	Yes	8,138	0.9	0	\$1,007	\$6,467	\$600	\$5,867	5.8	8,195
	TOTALS (COST EFFECTIVE MEASURES)		97,649	8.9	21	\$12,370	\$26,698	\$4,403	\$22,295	1.8	101,336
	TOTALS (ALL MEASURES)		97,649	8.9	21	\$12,370	\$26,698	\$4,403	\$22,295	1.8	101,336

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



ICE SKATING RINK

#	Energy Conservation Measure	Cost Effective?	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		85,946	35.2	-38	\$7,656	\$66,246	\$22,426	\$43,820	5.7	80,357
ECM 1	Install LED Fixtures	Yes	82,254	33.3	-36	\$7,326	\$57,460	\$20,330	\$37,130	5.1	76,898
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,455	0.9	-1	\$129	\$1,651	\$480	\$1,171	9.1	1,356
ECM 3	Retrofit Fixtures with LED Lamps	Yes	2,237	1.0	-1	\$200	\$7,135	\$1,616	\$5,519	27.5	2,104
Lighting	Control Measures		1,141	0.7	-1	\$101	\$4,136	\$1,270	\$2,866	28.3	1,063
ECM 4	Install Occupancy Sensor Lighting Controls	No	1,141	0.7	-1	\$101	\$4,136	\$1,270	\$2,866	28.3	1,063
Variable	Frequency Drive (VFD) Measures		15,543	8.3	0	\$1,488	\$24,678	\$5,600	\$19,078	12.8	15,652
ECM 5	Install VFDs on Chilled Water Pumps	Yes	13,897	7.8	0	\$1,331	\$17,432	\$5,200	\$12,232	9.2	13,995
ECM 6	Install VFDs on Heating Water Pumps	No	1,646	0.5	0	\$158	\$7,246	\$400	\$6,846	43.5	1,657
Electric	Chiller Replacement		123,060	68.7	0	\$11,783	\$85,210	\$1,820	\$83,390	7.1	123,920
ECM 7	Install High Efficiency Chillers	Yes	123,060	68.7	0	\$11,783	\$85,210	\$1,820	\$83,390	7.1	123,920
HVAC Sy	stem Improvements		0	0.0	30	\$450	\$408	\$200	\$208	0.5	4,860
ECM 8	Install Pipe Insulation	Yes	0	0.0	30	\$450	\$408	\$200	\$208	0.5	4,860
Domest	ic Water Heating Upgrade		278	0.0	3	\$69	\$86	\$86	\$0	0.0	737
ECM 9	Install Low-Flow DHW Devices	Yes	278	0.0	3	\$69	\$86	\$86	\$0	0.0	737
Food Se	rvice & Refrigeration Measures		3,969	0.5	0	\$380	\$920	\$300	\$620	1.6	3,997
ECM 10	Vending Machine Control	Yes	3,969	0.5	0	\$380	\$920	\$300	\$620	1.6	3,997
	TOTALS (COST EFFECTIVE MEASURES)		227,151	112.2	-5	\$21,669	\$170,302	\$30,032	\$140,270	6.5	227,866
	TOTALS (ALL MEASURES)		229,937	113.3	-6	\$21,928	\$181,685	\$31,702	\$149,982	6.8	230,586

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



PRINCETON COUNTRY CLUB

#	Energy Conservation Measure	Cost Effective?	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		21,161	4.6	-2	\$3,147	\$27,510	\$8,462	\$19,048	6.1	21,060
ECM 1	Install LED Fixtures	Yes	10,847	0.3	0	\$1,621	\$20,822	\$5,500	\$15,322	9.5	10,893
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	87	0.1	0	\$13	\$262	\$72	\$190	14.7	86
ECM 3	Retrofit Fixtures with LED Lamps	Yes	10,227	4.2	-2	\$1,513	\$6,426	\$2,890	\$3,536	2.3	10,081
Lighting	Control Measures		3,021	1.4	-1	\$446	\$6,705	\$2,820	\$3,885	8.7	2,967
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	2,677	1.2	-1	\$395	\$5,130	\$1,330	\$3 <i>,</i> 800	9.6	2,629
ECM 5	Install High/Low Lighting Controls	Yes	345	0.1	0	\$51	\$1,575	\$1,490	\$85	1.7	338
Variable	e Frequency Drive (VFD) Measures		5,148	1.7	0	\$770	\$7,768	\$800	\$6,968	9.0	5,184
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	5,148	1.7	0	\$770	\$7,768	\$800	\$6,968	9.0	5,184
HVAC S	ystem Improvements		0	0.0	13	\$116	\$88	\$40	\$48	0.4	1,479
ECM 7	Install Pipe Insulation	Yes	0	0.0	13	\$116	\$88	\$40	\$48	0.4	1,479
Domest	ic Water Heating Upgrade		989	0.0	0	\$148	\$72	\$72	\$0	0.0	996
ECM 8	Install Low-Flow DHW Devices	Yes	989	0.0	0	\$148	\$72	\$72	\$0	0.0	996
	TOTALS (COST EFFECTIVE MEASURES)			7.7	10	\$4,627	\$42,143	\$12,194	\$29,949	6.5	31,686
	TOTALS (ALL MEASURES)		30,320	7.7	10	\$4,627	\$42,143	\$12,194	\$29,949	6.5	31,686

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



MT VIEW GOLF COURSE

#	Energy Conservation Measure	Cost Effective?	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 (Ibs)
Lighting	Upgrades		35,042	3.7	-4	\$5,885	\$11,391	\$3,206	\$8,185	1.4	34,831
ECM 1	Install LED Fixtures	Yes	3,294	0.0	0	\$557	\$4,222	\$1,150	\$3,072	5.5	3,317
ECM 2	Retrofit Fixtures with LED Lamps	Yes	31,748	3.7	-4	\$5,329	\$7,169	\$2,056	\$5,113	1.0	31,514
Lighting	Lighting Control Measures		4,727	0.9	-1	\$789	\$5,478	\$2 <i>,</i> 690	\$2,788	3.5	4,642
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	2,928	0.5	-1	\$489	\$2,778	\$750	\$2,028	4.1	2,876
ECM 4	Install High/Low Lighting Controls	Yes	1,799	0.3	0	\$300	\$2,700	\$1,940	\$760	2.5	1,766
Domest	ic Water Heating Upgrade		0	0.0	4	\$36	\$108	\$95	\$13	0.4	451
ECM 5	Install Low-Flow DHW Devices	Yes	0	0.0	4	\$36	\$108	\$95	\$13	0.4	451
Food Se	rvice & Refrigeration Measures		16,082	1.3	0	\$2,718	\$5,080	\$720	\$4,360	1.6	16,195
ECM 6	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	7,864	1.0	0	\$1,329	\$1,213	\$320	\$893	0.7	7,919
ECM 7	Refrigeration Controls	Yes	8,218	0.3	0	\$1,389	\$3,867	\$400	\$3,467	2.5	8,276
	TOTALS (COST EFFECTIVE MEASURES)		55,851	5.9	-1	\$9,428	\$22,056	\$6,711	\$15,345	1.6	56,119
	TOTALS (ALL MEASURES)		55,851	5.9	-1	\$9,428	\$22,056	\$6,711	\$15,345	1.6	56,119

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



EQUESTRIAN CENTER

#	Energy Conservation Measure	Cost Effective?	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		17,770	2.1	-6	\$2,807	\$24,079	\$7,190	\$16,889	6.0	16,989
ECM 1	Install LED Fixtures	Yes	13,125	1.4	-4	\$2,080	\$22,825	\$6,900	\$15,925	7.7	12,628
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	628	0.1	0	\$98	\$275	\$80	\$195	2.0	585
ECM 3	Retrofit Fixtures with LED Lamps	Yes	4,017	0.6	-2	\$629	\$979	\$210	\$769	1.2	3,777
Lighting Control Measures			3,454	0.6	-2	\$538	\$5,106	\$3,540	\$1,566	2.9	3,218
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	1,404	0.3	-1	\$219	\$1,956	\$390	\$1,566	7.2	1,309
ECM 5	Install High/Low Lighting Controls	Yes	2,049	0.4	-1	\$319	\$3,150	\$3,150	\$O	0.0	1,909
Domest	ic Water Heating Upgrade		450	0.0	0	\$73	\$104	\$44	\$59	0.8	454
ECM 6	Install Low-Flow DHW Devices	Yes	450	0.0	0	\$73	\$104	\$44	\$59	0.8	454
Food Se	rvice & Refrigeration Measures		1,612	0.2	0	\$262	\$230	\$100	\$130	0.5	1,623
ECM 7	Vending Machine Control	Yes	1,612	0.2	0	\$262	\$230	\$100	\$130	0.5	1,623
	TOTALS (COST EFFECTIVE MEASURES)		23,286	2.9	-7	\$3,680	\$29,519	\$10,874	\$18,645	5.1	22,284
	TOTALS (ALL MEASURES)		23,286	2.9	-7	\$3,680	\$29,519	\$10,874	\$18,645	5.1	22,284

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



WILDLIFE CENTER

#	Energy Conservation Measure	Cost Effective?	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 (Ibs)
Lighting	Upgrades		20,979	3.0	0	\$2,704	\$11,808	\$3,360	\$8,448	3.1	21,126
ECM 1	Install LED Fixtures	Yes	1,939	0.0	0	\$250	\$5,583	\$1,200	\$4,383	17.5	1,953
ECM 2	Retrofit Fixtures with LED Lamps	Yes	19,040	3.0	0	\$2,454	\$6,224	\$2,160	\$4,064	1.7	19,173
Lighting	Control Measures		6,182	0.9	0	\$797	\$6,611	\$2,665	\$3,946	5.0	6,225
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	3,951	0.7	0	\$509	\$4,436	\$1,090	\$3,346	6.6	3,979
ECM 4	Install Photocell Controls	Yes	723	0.0	0	\$93	\$600	\$0	\$600	6.4	728
ECM 5	Install High/Low Lighting Controls	Yes	1,507	0.2	0	\$194	\$1,575	\$1,575	\$0	0.0	1,518
Domest	ic Water Heating Upgrade		711	0.0	0	\$92	\$79	\$47	\$32	0.3	716
ECM 6	Install Low-Flow DHW Devices	Yes	711	0.0	0	\$92	\$79	\$47	\$32	0.3	716
Food Se	rvice & Refrigeration Measures		6,362	0.6	0	\$820	\$3,363	\$320	\$3,043	3.7	6,407
ECM 7	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	2,460	0.2	0	\$317	\$1,213	\$320	\$893	2.8	2,477
ECM 8	Replace Refrigeration Equipment	Yes	3,902	0.4	0	\$503	\$2,150	\$0	\$2,150	4.3	3,929
	TOTALS (COST EFFECTIVE MEASURES)		34,235	4.5	0	\$4,412	\$21,861	\$6,392	\$15,468	3.5	34,474
	TOTALS (ALL MEASURES)		34,235	4.5	0	\$4,412	\$21,861	\$6,392	\$15,468	3.5	34,474

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



MERCER OAKS GOLF COURSE

#	Energy Conservation Measure	Cost Effective?	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		26,834	4.4	-5	\$4,557	\$3,909	\$888	\$3,021	0.7	26,432
ECM 1	Install LED Fixtures	Yes	3,123	0.0	0	\$536	\$931	\$100	\$831	1.5	3,145
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	134	0.0	0	\$23	\$51	\$10	\$41	1.8	132
ECM 3	Retrofit Fixtures with LED Lamps	Yes	23,397	4.4	-5	\$3,967	\$2,856	\$778	\$2,078	0.5	22,978
ECM 4	Install LED Exit Signs	Yes	180	0.0	0	\$30	\$72	\$0	\$72	2.4	177
Lighting	Control Measures		4,635	0.9	-1	\$786	\$5,729	\$1,650	\$4,079	5.2	4,552
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	4,554	0.9	-1	\$772	\$5,504	\$1,650	\$3,854	5.0	4,472
ECM 6	Install High/Low Lighting Controls	Yes	81	0.0	0	\$14	\$225	\$0	\$225	16.3	80
Motor L	Ipgrades		939	0.2	0	\$161	\$2,401	\$0	\$2,401	14.9	945
ECM 7	Premium Efficiency Motors	No	939	0.2	0	\$161	\$2,401	\$0	\$2,401	14.9	945
Electric	Unitary HVAC Measures		10,456	4.4	0	\$1,795	\$52,193	\$7,110	\$45,083	25.1	10,529
ECM 8	Install High Efficiency Air Conditioning Units	No	10,456	4.4	0	\$1,795	\$52,193	\$7,110	\$45,083	25.1	10,529
Domest	ic Water Heating Upgrade		114	0.0	4	\$62	\$286	\$149	\$138	2.2	616
ECM 9	Install Low-Flow DHW Devices	Yes	114	0.0	4	\$62	\$286	\$149	\$138	2.2	616
Food Se	rvice & Refrigeration Measures		5,228	0.2	0	\$897	\$9,338	\$1,260	\$8,078	9.0	5,264
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,376	0.2	0	\$236	\$2,123	\$560	\$1,563	6.6	1,386
ECM 11	Refrigeration Controls	Yes	3,852	0.1	0	\$661	\$7,215	\$700	\$6,515	9.9	3,879
	TOTALS (COST EFFECTIVE MEASURES)		36,812	5.5	-2	\$6,302	\$19,262	\$3,947	\$15,316	2.4	36,864
	TOTALS (ALL MEASURES)		48,207	10.0	-2	\$8,258	\$73,857	\$11,057	\$62,800	7.6	48,339

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



TULPEHAKING NATURE CENTER

#	Energy Conservation Measure	Cost Effective?	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		601	0.2	0	\$94	\$496	\$136	\$360	3.8	594
ECM 1	Retrofit Fixtures with LED Lamps	Yes	601	0.2	0	\$94	\$496	\$136	\$360	3.8	594
Lighting	Control Measures		470	0.2	0	\$73	\$1,350	\$350	\$1,000	13.7	461
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	470	0.2	0	\$73	\$1,350	\$350	\$1,000	13.7	461
HVAC S	ystem Improvements		186	0.0	5	\$73	\$10	\$0	\$10	0.1	797
ECM 3	Reprogram Programmable Thermostats	Yes	186	0.0	5	\$73	\$10	\$0	\$10	0.1	797
Domest	ic Water Heating Upgrade		0	0.0	2	\$16	\$50	\$0	\$50	3.2	219
ECM 4	Install Low-Flow DHW Devices	Yes	0	0.0	2	\$16	\$50	\$0	\$50	3.2	219
	TOTALS (COST EFFECTIVE MEASURES)		1,256	0.4	7	\$255	\$1,906	\$486	\$1,420	5.6	2,071
	TOTALS (ALL MEASURES)		1,256	0.4	7	\$255	\$1,906	\$486	\$1,420	5.6	2,071

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



HOWELL FARM VISITOR CENTER

#	Energy Conservation Measure	Cost Effective?	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 (Ibs)
Lighting	Upgrades		8,312	6.8	-3	\$1,114	\$7,673	\$1,994	\$5,679	5.1	7,984
ECM 1	Install LED Fixtures	Yes	1,270	0.0	0	\$184	\$3,722	\$800	\$2,922	15.9	1,279
ECM 2	Retrofit Fixtures with LED Lamps	Yes	7,041	6.8	-3	\$931	\$3,951	\$1,194	\$2,757	3.0	6,704
Lighting	Control Measures		1,043	0.5	0	\$137	\$3,112	\$795	\$2,317	16.9	989
ECM 3	Install Occupancy Sensor Lighting Controls	No	937	0.4	0	\$123	\$2,662	\$570	\$2,092	17.0	888
ECM 4	Install High/Low Lighting Controls	No	106	0.0	0	\$14	\$450	\$225	\$225	16.1	101
Electric	Unitary HVAC Measures		1,344	1.7	0	\$194	\$14,962	\$1,840	\$13,122	67.5	1,353
ECM 5	Install High Efficiency Air Conditioning Units	No	1,344	1.7	0	\$194	\$14,962	\$1,840	\$13,122	67.5	1,353
Domest	ic Water Heating Upgrade		0	0.0	3	\$84	\$72	\$65	\$6	0.1	372
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	3	\$84	\$72	\$65	\$6	0.1	372
	TOTALS (COST EFFECTIVE MEASURES)		8,312	6.8	0	\$1,198	\$7,745	\$2,059	\$5,686	4.7	8,355
	TOTALS (ALL MEASURES)		10,699	9.0	-1	\$1,529	\$25,819	\$4,694	\$21,125	13.8	10,697

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



ARM & HAMMER PARK

#	Energy Conservation Measure	Cost Effective?	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		168,201	20.2	-16	\$22,055	\$202,689	\$9,298	\$193,391	8.8	167,453
ECM 1	Install LED Fixtures	Yes	93,353	0.6	0	\$12,312	\$176,564	\$860	\$175,704	14.3	93,949
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	61,562	15.8	-13	\$8,014	\$19,275	\$6,060	\$13,215	1.6	60,457
ECM 3	Retrofit Fixtures with LED Lamps	Yes	9,529	3.4	-2	\$1,241	\$4,750	\$2,378	\$2,372	1.9	9,358
ECM 4	Install LED Exit Signs	Yes	3,756	0.4	-1	\$489	\$2,100	\$0	\$2,100	4.3	3,689
Lighting	Control Measures		28,716	7.5	-6	\$3,738	\$27,360	\$12,505	\$14,855	4.0	28,201
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	20,455	5.4	-4	\$2,663	\$19,710	\$4,900	\$14,810	5.6	20,088
ECM 6	Install High/Low Lighting Controls	Yes	8,261	2.1	-2	\$1,075	\$7,650	\$7,605	\$45	0.0	8,113
Variable	Frequency Drive (VFD) Measures		73,109	13.7	0	\$9,645	\$58,536	\$5,150	\$53,386	5.5	73,621
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	No	73,109	13.7	0	\$9,645	\$58,536	\$5,150	\$53,386	5.5	73,621
Domest	ic Water Heating Upgrade		230	0.0	85	\$726	\$39,065	\$1,304	\$37,761	52.0	10,180
ECM 8	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	45	\$365	\$36,005	\$0	\$36,005	98.7	5,220
ECM 9	Install Low-Flow DHW Devices	Yes	230	0.0	40	\$361	\$3,060	\$1,304	\$1,756	4.9	4,960
Food Se	rvice & Refrigeration Measures		14,692	1.1	0	\$1,938	\$27,563	\$3,740	\$23,823	12.3	14,794
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	4,194	0.5	0	\$553	\$5 <i>,</i> 459	\$1,440	\$4,019	7.3	4,223
ECM 11	Refrigeration Controls	No	7,274	0.2	0	\$960	\$21,644	\$2,100	\$19,544	20.4	7,325
ECM 12	Vending Machine Control	Yes	3,224	0.4	0	\$425	\$460	\$200	\$260	0.6	3,246
	TOTALS (COST EFFECTIVE MEASURES)		204,564	28.6	18	\$27,133	\$239,028	\$24,747	\$214,281	7.9	208,083
	TOTALS (ALL MEASURES)		284,947	42.5	62	\$38,102	\$355,213	\$31,997	\$323,216	8.5	294,249

* - All incentives presented in this table are based on NJ SmartStart 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).

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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



MEASURES FOR FUTURE CONSIDERATION

- Eliminate Oversized Domestic Hot Water Heating Systems
- Installation of an Energy
 Management System



SOLAR ENERGY GENERATION POTENTIAL

	Tennis Center & Hall of Fame	Marina & Boat House	lce Skating Rink	Mt View Golf Course	Wildlife Center	Mercer Oaks Golf Course	Arm & Hammer Park
Potential:	Medium	HIGH	HIGH	Medium	HIGH	HIGH	HIGH
System Potential: (kW)	207	107	116	60	59	102	400
Electric Generation: (kWh per year)	155,756	127,477	138,199	71,482	70,291	121,520	476,549
Displaced Cost: (per year)	\$30,030	\$15,700	\$13,230	\$12,080	\$9,060	\$20,860	\$62,870

Transition Incentive (TI) Program:

https://www.njcleanenergy.com/renewableenergy/programs/transition-incentive-program



Community Solar Energy Pilot Program: http://www.NJCleanEnergy.com/Commu nitySolar

FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the NJBPU
- Project is paid for with the value of its own energy savings
- 15 or 20-year repayment term
- NJCEP incentives/rebates are layered within an ESIP
- No upfront capital expenses



FINANCING MECHANISM: ESIP



Rew Jersey's Cleanenergy

Program

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

FOR MORE INFORMATION

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CLEAN ENERGY PROGRAM PORTFOLIO

ELIGIBLE SECTORS

INCENTIVE PROGRAMS

OTHER PROGRAMS



Commercial, Industrial, Government, Non-Profit, Institutional and Multifamily

Equipment Rebates:

- SmartStart
- Customer Tailored Energy Efficiency Pilot (CTEEP)
- Direct Install
- Large Energy Users

Whole Buildings:

• Pay for Performance

Energy Generation:

Combined Heat and Power – Fuel Cells

Renewable Energy Generation:

- Transition Incentive (TI) Program
- Community Solar

RECOMMENDED NJCEP INCENTIVES PER BUILDING

Entity Name	Pay For Performance	Direct Install	SmartStart	CTEEP
Howell Farm Visitor Center		Х	Х	Х
Mercer Oaks Golf Course		Х	Х	Х
Princeton Country Club		Х	Х	Х
Arm & Hammer Park	Х		Х	Х
Equestrian Center		Х	Х	Х
Ice Skating Rink		Х	Х	Х
Maintenance Building		Х	Х	Х
Marina & Boat House		Х	Х	Х
Mt View Golf Course		Х	Х	Х
Rec & Staff Building		Х	Х	Х
Tennis Center			Х	Х
Tulpehaking Nature Center		Х	Х	Х
Wildlife Center		Х	Х	Х



PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P

What is P4P: Comprehensive, whole-building approach to saving energy in existing or new facilities.



- Qualifications: Annual peak demand 200 kW+ in the previous year for existing buildings
- About:Customer choose from a network of pre-approved ParticipatingPartners

Incentives: Incentives paid in <u>three</u> installments

- Up to \$2MM per project((\$4MM entity cap/year)
 - \$1 million for electric measures
 - \$1 million for gas measures
- Up to 50% of project cost (<u>or 80%</u> for UEZ/OZ/<u>Local Govt</u>./ K-12 Public Schools) up to \$2MM per project / \$4MM per entity annually



PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P





DIRECT INSTALL

NJCleanEnergy.com/DI

What is DI: Turn-key retrofit program to replace outdated and inefficient equipment, including lighting, HVAC, refrigeration, etc.



Qualifications: Average electric peak demand <200 kW in the previous 12 months

About:

- Pre-approved participating contractors provide support and process paperwork
 - Incentives paid directly to the contractor
 - Fast project turnaround time (4-6 months)

Incentives:

- \$125,000 incentive funding per project/building (<u>\$250K</u>UEZ/OZ/ Local Govt./K-12 Public Schools), or
 - \$250,000 entity cap (<u>\$4MM</u>UEZ/OZ/<u>Local Govt</u>./K-12 Public Schools)



DIRECT INSTALL

NJCleanEnergy.com/DI

Facilities in Urban Enterprise Zones (UEZ), Opportunity Zones (OZ), Local Governments, and K-12 public schools:

INCENTIVE FUNDING	CUSTOMER
Up to 80% of installed cost is paid directly to the contractor	20% of installed cost
All other eligible facilities:	
INCENTIVE FUNDING	CUSTOMER
Up to 70% of installed cost is paid directly to the contractor	30% of installed cost





Participating Contractor

Tri-State Light & Energy, Inc. Alan Rhode 610-789-1900 x226 <u>asr@tsle.com</u>



SMARTSTART

NJCleanEnergy.com/SSB

What is SSB: Individual high efficiency equipment rebates for new construction, renovation, remodeling, equipment replacement



Qualifications: • All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- Prescriptive and custom designed measures
- Pre-approval required only for lighting projects with incentives >\$100,000 and <u>all</u> custom projects
- For measures not requiring pre-approval, applications must be submitted to the program within one year of purchase.

Incentives:

- Prescriptive: \$500,000 cap for each electric or gas account
- Custom, lesser of the following:
 - \$0.16/kWh and/or \$1.60/Therm saved annually
 - 50% of incremental installed cost
 - Buy-down to 1 year payback based on incremental cost and savings



SMARTSTART

NJCleanEnergy.com/SSB



PRESCRIPTIVE INCENTIVES

- Electric Chillers
- Gas Cooling
- Electric Unitary HVAC
- Ground Source Heat Pumps
- Gas Heating
- Variable Frequency Drives
- Gas Water Heating
- Lighting/Lighting Controls
- Refrigeration Doors
- Refrigeration Controls
- Food Service Equipment
- Refrigerator/Freezer Motors



DOUBLE INCENTIVES

for OZ/UEZ, local government (munis & counties), K-12 public school, or designated as affordable housing



- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Must meet code for retrofit projects or exceed code for new construction
- Project pre and post inspection required

CUSTOMER TAILORED ENERGY EFFICIENCY PILOT NJCleanEnergy.com/CTEEP

What is CTEEP: A streamlined/single application process for participants submitting multiple different technology types.

Qualifications: • All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- On site assistance available
- Additional technical incentive available to offset soft costs associated with developing and planning custom projects

Incentives:

- Up to \$500,000 for each electric or gas account
- Technical assistance incentives for custom project evaluation (up to \$10K)

SAME INCENTIVE VALUES AS SMARTSTART



CTEEP: CUSTOMER TAILORED ENERGY EFFICIENCY PILOT

NJCleanEnergy.com/CTEEF

program"



LOCAL GOVERNMENT FLEETS

Electric vehicles are now included in the State Purchasing Contract!

- New NJBPU Grant Program
 - Designed to encourage local governments to add EVs to their fleet
 - \$4000 per battery electric vehicle
 - \$1500 for one Level-Two EV charging station
 - Grants awarded on rolling basis until June 2021 or until funding expended

Questions? EV.programs@bpu.nj.gov



FOR MORE INFORMATION

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QUESTIONS



