New Jersey's Clean Energy Program

LGEA Exit Meeting for:

Barnegat School District

October 17, 2019

INTRODUCTIONS

Barnegat Township School District

- Steve Brennan – Business Administrator
- Neil Piro – Facilities Supervisor

- *NJ Clean Energy Program*
  - Yagna Otia – TRC Auditor
  - Amanda Muench – TRC Account Manager
  - Tony O'Donnell – TRC Outreach Manager
  - Michelle Rossi – ESIP Coordinator, BPU State Energy Office
  - Arif Welcher – BPU Government Business Manager

AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified
- Questions regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Barnegat Township School District

LGEA Process

- Application Approval
- Scheduling Call
- Audit
- Benchmarking & Analysis
- Draft Report
- Exit Meeting Presentation
- Final Report

New Jersey's cleanenergy program™

Site Visit & Utility Analysis

Overview of Systems, Baseline & Existing Conditions:

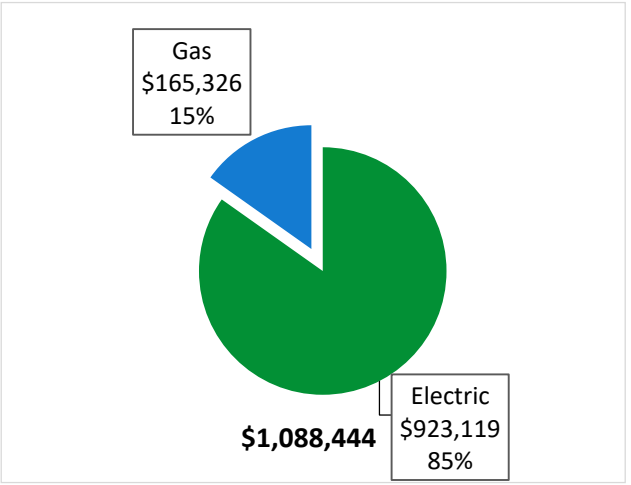
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Kitchen Equipment

Utility Consumption:

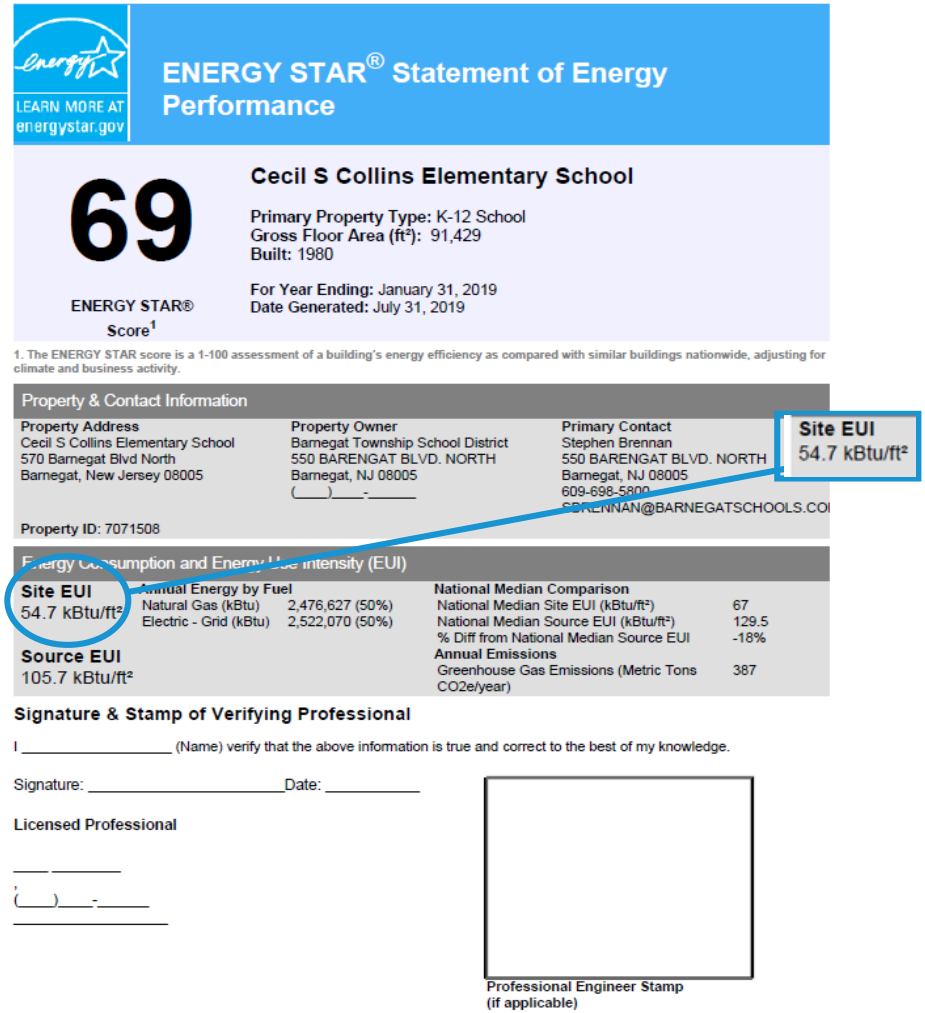
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Solar Generation and Costs

Sites Visited/Analyzed

- Barnegat Township High School
- Russell O. Brackman Middle School
- Cecil S. Collins Elementary School & Board Offices
- Lillian M. Dunfee Elementary School
- Robert L. Horbelt Elementary School



BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

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ENERGY STAR® Score[1]

Cecil S Collins Elementary School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 91,429
Built: 1980

For Year Ending: January 31, 2019
Date Generated: July 31, 2019

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
Cecil S Collins Elementary School 570 Barnegat Blvd North Barnegat, New Jersey 08005	Barnegat Township School District 550 BARENGAT BLVD. NORTH Barnegat, NJ 08005 (___)___-____	Stephen Brennan 550 BARENGAT BLVD. NORTH Barnegat, NJ 08005 609-698-5800 SBRENNAN@BARNEGATSCHOOLS.CO

Property ID: 7071508

Site EUI
54.7 kBtu/ft²

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
54.7 kBtu/ft²

Source EUI
105.7 kBtu/ft²

Annual Energy by Fuel

Natural Gas (kBtu)	2,476,627 (50%)
Electric - Grid (kBtu)	2,522,070 (50%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	67
National Median Source EUI (kBtu/ft²)	129.5
% Diff from National Median Source EUI	-18%

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO2e/year)	387

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

___ _____

(___)___-____

_____

Professional Engineer Stamp
(if applicable)

Building Name	ENERGY STAR® Score
Barnegat Township High School	21
Russell O. Brackman Middle School	48
Cecil S. Collins Elementary School/Board Offices	69
Lillian M. Dunfee Elementary School	57
Robert L. Horbelt Elementary School	53
Joseph T. Donahue Elementary School	32

ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

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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_2e Emissions Reduction (lbs)
Lighting Upgrades	**933,892**	**200.7**	**-165.6**	**$107,022**	**$492,620**	**$78,810**	**$413,810**	**3.9**	**921,034**
Install LED Fixtures	131,531	14.8	0.0	$15,202	$221,550	$13,000	$208,550	13.7	132,451
Retrofit Fluorescent Fixtures with LED Lamps and Drivers	156	0.1	0.0	$17	$206	$30	$176	10.2	153
Retrofit Fixtures with LED Lamps	802,205	185.8	-165.5	$91,803	$270,864	$65,780	$205,084	2.2	788,431
Lighting Control Measures	**132,450**	**25.7**	**-27.7**	**$15,810**	**$105,204**	**$10,460**	**$94,744**	**6.0**	**130,134**
Install Occupancy Sensor Lighting Controls	115,430	22.2	-24.1	$13,761	$86,965	$10,460	$76,505	5.6	113,411
Install High/Low Lighting Controls	17,020	3.5	-3.6	$2,048	$18,239	$0	$18,239	8.9	16,723
Premium Efficiency Motors	5,469	1.0	0.0	$617	$4,495	$0	$4,495	7.3	5,507
Variable Frequency Drive (VFD) Measures	**693,418**	**171.9**	**0.0**	**$81,596**	**$388,332**	**$37,460**	**$350,872**	**4.3**	**698,267**
Install VFDs on Constant Volume (CV) Fans	478,333	126.6	0.0	$56,202	$311,453	$34,460	$276,993	4.9	481,677
Install VFDs on Chilled Water Pumps	29,888	9.3	0.0	$3,374	$21,690	$3,000	$18,690	5.5	30,097
Install VFDs on Heating Water Pumps	185,198	36.1	0.0	$22,021	$55,189	$0	$55,189	2.5	186,493
Electric Unitary HVAC Measures	**112,163**	**56.2**	**0.0**	**$13,640**	**$1,085,588**	**$29,443**	**$1,056,144**	**77.4**	**112,947**
Install High Efficiency Air Conditioning Units	56,475	33.8	0.0	$6,968	$698,998	$15,650	$683,348	98.1	56,869
Install High Efficiency Heat Pumps	53,778	21.6	0.0	$6,456	$373,951	$13,364	$360,587	55.9	54,154
Install High Efficiency PTAC/PTHP	1,911	0.9	0.0	$216	$12,638	$429	$12,209	56.6	1,924
Electric Chiller Replacement	**140,608**	**90.6**	**0.0**	**$15,871**	**$932,906**	**$82,800**	**$850,106**	**53.6**	**141,591**
Install High Efficiency Chillers	140,608	90.6	0.0	$15,871	$932,906	$82,800	$850,106	53.6	141,591
Gas Heating (HVAC/Process) Replacement	**0**	**0.0**	**336.7**	**$3,571**	**$208,640**	**$17,380**	**$191,260**	**53.6**	**39,420**
Install High Efficiency Hot Water Boilers	0	0.0	73.2	$794	$105,885	$11,380	$94,505	119.0	8,574
Install High Efficiency Furnaces	0	0.0	259.5	$2,738	$100,417	$6,000	$94,417	34.5	30,388
Install High Efficiency Unit Heaters	0	0.0	3.9	$39	$2,338	$0	$2,338	60.0	458
Domestic Water Heating Upgrade	**584**	**0.0**	**236.3**	**$2,525**	**$67,376**	**$2,318**	**$65,057**	**25.8**	**28,251**
Install High Efficiency Gas-Fired Water Heater	0	0.0	48.7	$511	$66,601	$2,318	$64,283	125.9	5,708
Install Low-Flow DHW Devices	584	0.0	187.5	$2,014	$774	$0	$774	0.4	22,543
Food Service Equipment & Refrigeration Measures	**2,471**	**0.1**	**0.0**	**$293**	**$1,429**	**$50**	**$1,379**	**4.7**	**2,488**
Refrigerator/Freezer Case Electrically Commutated Motors	1,237	0.1	0.0	$147	$910	$0	$910	6.2	1,245
Refrigeration Controls	1,234	0.0	0.0	$146	$519	$50	$469	3.2	1,242
Plug Load Equipment Control - Vending Machine	**20,954**	**2.4**	**0.0**	**$2,452**	**$2,990**	**$650**	**$2,340**	**1.0**	**21,100**
Vending Machine Control	20,954	2.4	0.0	$2,452	$2,990	$650	$2,340	1.0	21,100
TOTALS	**2,042,009**	**548.6**	**379.7**	**$243,396**	**$3,289,579**	**$259,372**	**$3,030,207**	**12.4**	**2,100,740**

* - 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_2e Emissions Reduction (lbs)
Lighting Upgrades		**923,358**	**199.7**	**-165.6**	**$105,746**	**$463,667**	**$75,710**	**$387,957**	**3.7**	**910,426**
ECM 1	Install LED Fixtures	120,997	13.8	0.0	$13,926	$192,596	$9,900	$182,696	13.1	121,843
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	156	0.1	0.0	$17	$206	$30	$176	10.2	153
ECM 3	Retrofit Fixtures with LED Lamps	802,205	185.8	-165.5	$91,803	$270,864	$65,780	$205,084	2.2	788,431
Lighting Control Measures		**132,450**	**25.7**	**-27.7**	**$15,810**	**$105,204**	**$10,460**	**$94,744**	**6.0**	**130,134**
ECM 4	Install Occupancy Sensor Lighting Controls	115,430	22.2	-24.1	$13,761	$86,965	$10,460	$76,505	5.6	113,411
ECM 5	Install High/Low Lighting Controls	17,020	3.5	-3.6	$2,048	$18,239	$0	$18,239	8.9	16,723
ECM 6	Premium Efficiency Motors	5,469	1.0	0.0	$617	$4,495	$0	$4,495	7.3	5,507
Variable Frequency Drive (VFD) Measures		**693,418**	**171.9**	**0.0**	**$81,596**	**$388,332**	**$37,460**	**$350,872**	**4.3**	**698,267**
ECM 7	Install VFDs on Constant Volume (CV) Fans	478,333	126.6	0.0	$56,202	$311,453	$34,460	$276,993	4.9	481,677
ECM 8	Install VFDs on Chilled Water Pumps	29,888	9.3	0.0	$3,374	$21,690	$3,000	$18,690	5.5	30,097
ECM 9	Install VFDs on Heating Water Pumps	185,198	36.1	0.0	$22,021	$55,189	$0	$55,189	2.5	186,493
ECM 10	Install High Efficiency Heat Pumps	22,049	8.2	0.0	$2,613	$22,780	$1,114	$21,666	8.3	22,203
Domestic Water Heating Upgrade		**584**	**0.0**	**187.5**	**$2,014**	**$774**	**$0**	**$774**	**0.4**	**22,543**
ECM 11	Install Low-Flow DHW Devices	584	0.0	187.5	$2,014	$774	$0	$774	0.4	22,543
Food Service Equipment & Refrigeration Measures		**2,471**	**0.1**	**0.0**	**$293**	**$1,429**	**$50**	**$1,379**	**4.7**	**2,488**
ECM 12	Refrigerator/Freezer Case Electrically Commutated Motors	1,237	0.1	0.0	$147	$910	$0	$910	6.2	1,245
ECM 13	Refrigeration Controls	1,234	0.0	0.0	$146	$519	$50	$469	3.2	1,242
Plug Load Equipment Control - Vending Machine		**20,954**	**2.4**	**0.0**	**$2,452**	**$2,990**	**$650**	**$2,340**	**1.0**	**21,100**
ECM 14	Vending Machine Control	20,954	2.4	0.0	$2,452	$2,990	$650	$2,340	1.0	21,100
TOTALS		**1,800,752**	**409.0**	**-5.8**	**$211,141**	**$989,670**	**$125,444**	**$864,227**	**4.1**	**1,812,668**

* - 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).

BARNEGAT TOWNSHIP HIGH SCHOOL

#	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_2e Emissions Reduction (lbs)
Lighting Upgrades			**391,404**	**79.8**	**-68**	**$43,505**	**$207,670**	**$25,447**	**$182,223**	**4.2**	**386,216**
ECM 1	Install LED Fixtures	Yes	64,972	7.4	0	$7,334	$102,761	$600	$102,161	13.9	65,426
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	156	0.1	0	$17	$206	$30	$176	10.2	153
ECM 3	Retrofit Fixtures with LED Lamps	Yes	326,276	72.3	-68	$36,155	$104,702	$24,817	$79,885	2.2	320,637
Lighting Control Measures			**7,557**	**1.3**	**-2**	**$837**	**$3,822**	**$325**	**$3,497**	**4.2**	**7,425**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	7,557	1.3	-2	$837	$3,822	$325	$3,497	4.2	7,425
Motor Upgrades			**5,469**	**1.0**	**0**	**$617**	**$4,495**	**$0**	**$4,495**	**7.3**	**5,507**
ECM 5	Premium Efficiency Motors	Yes	5,469	1.0	0	$617	$4,495	$0	$4,495	7.3	5,507
Variable Frequency Drive (VFD) Measures			**276,092**	**66.7**	**0**	**$31,163**	**$156,251**	**$18,840**	**$137,411**	**4.4**	**278,023**
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	246,205	57.4	0	$27,790	$134,561	$15,840	$118,721	4.3	247,926
ECM 7	Install VFDs on Chilled Water Pumps	Yes	29,888	9.3	0	$3,374	$21,690	$3,000	$18,690	5.5	30,097
Electric Unitary HVAC Measures			**3,595**	**1.6**	**0**	**$406**	**$21,978**	**$498**	**$21,480**	**52.9**	**3,620**
ECM 8	Install High Efficiency Air Conditioning Units	No	1,685	0.8	0	$190	$9,341	$69	$9,272	48.8	1,697
ECM 9	Install High Efficiency PTAC/PTHP	No	1,911	0.9	0	$216	$12,638	$429	$12,209	56.6	1,924
Electric Chiller Replacement			**140,608**	**90.6**	**0**	**$15,871**	**$932,906**	**$82,800**	**$850,106**	**53.6**	**141,591**
ECM 10	Install High Efficiency Chillers	No	140,608	90.6	0	$15,871	$932,906	$82,800	$850,106	53.6	141,591
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**26**	**$259**	**$11,401**	**$400**	**$11,001**	**42.5**	**3,047**
ECM 11	Install High Efficiency Furnaces	No	0	0.0	22	$220	$9,063	$400	$8,663	39.4	2,588
ECM 12	Install High Efficiency Unit Heaters	No	0	0.0	4	$39	$2,338	$0	$2,338	60.0	458
Domestic Water Heating Upgrade			**0**	**0.0**	**57**	**$567**	**$143**	**$0**	**$143**	**0.3**	**6,666**
ECM 13	Install Low-Flow DHW Devices	Yes	0	0.0	57	$567	$143	$0	$143	0.3	6,666
Food Service & Refrigeration Measures			**8,059**	**0.9**	**0**	**$910**	**$1,150**	**$250**	**$900**	**1.0**	**8,116**
ECM 14	Vending Machine Control	Yes	8,059	0.9	0	$910	$1,150	$250	$900	1.0	8,116
TOTALS (COST EFFECTIVE MEASURES)			**688,581**	**149.7**	**-12**	**$77,600**	**$373,533**	**$44,862**	**$328,671**	**4.2**	**691,953**
TOTALS (ALL MEASURES)			**832,785**	**241.9**	**14**	**$94,136**	**$1,339,818**	**$128,560**	**$1,211,258**	**12.9**	**840,211**

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RUSSEL O. BRACKMAN MIDDLE SCHOOL

#	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_2e Emissions Reduction (lbs)
Lighting Upgrades			**326,813**	**61.7**	**-66**	**$38,036**	**$115,119**	**$23,552**	**$91,567**	**2.4**	**321,425**
ECM 1	Install LED Fixtures	Yes	12,525	1.4	0	$1,485	$41,537	$4,300	$37,237	25.1	12,612
ECM 2	Retrofit Fixtures with LED Lamps	Yes	314,288	60.3	-66	$36,552	$73,583	$19,252	$54,331	1.5	308,813
Lighting Control Measures			**63,323**	**10.9**	**-13**	**$7,364**	**$44,240**	**$4,755**	**$39,485**	**5.4**	**62,215**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	56,068	9.6	-12	$6,520	$38,274	$4,755	$33,519	5.1	55,088
ECM 4	Install High/Low Lighting Controls	Yes	7,254	1.2	-2	$844	$5,966	$0	$5,966	7.1	7,127
Variable Frequency Drive (VFD) Measures			**233,009**	**54.1**	**0**	**$27,618**	**$101,042**	**$5,280**	**$95,762**	**3.5**	**234,638**
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	56,325	19.0	0	$6,676	$54,247	$5,280	$48,967	7.3	56,719
ECM 6	Install VFDs on Heating Water Pumps	Yes	176,684	35.1	0	$20,942	$46,795	$0	$46,795	2.2	177,920
Electric Unitary HVAC Measures			**44,469**	**20.3**	**0**	**$5,271**	**$297,942**	**$6,425**	**$291,517**	**55.3**	**44,780**
ECM 7	Install High Efficiency Air Conditioning Units	No	22,420	12.1	0	$2,657	$275,162	$5,311	$269,851	101.5	22,577
ECM 8	Install High Efficiency Heat Pumps	Yes	22,049	8.2	0	$2,613	$22,780	$1,114	$21,666	8.3	22,203
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**92**	**$979**	**$37,996**	**$2,400**	**$35,596**	**36.4**	**10,717**
ECM 9	Install High Efficiency Furnaces	No	0	0.0	92	$979	$37,996	$2,400	$35,596	36.4	10,717
Domestic Water Heating Upgrade			**0**	**0.0**	**46**	**$490**	**$42,236**	**$1,470**	**$40,766**	**83.2**	**5,366**
ECM 10	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	8	$84	$42,092	$1,470	$40,622	482.4	922
ECM 11	Install Low-Flow DHW Devices	Yes	0	0.0	38	$406	$143	$0	$143	0.4	4,444
Food Service & Refrigeration Measures			**8,918**	**0.8**	**0**	**$1,057**	**$2,349**	**$250**	**$2,099**	**2.0**	**8,980**
ECM 12	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,237	0.1	0	$147	$910	$0	$910	6.2	1,245
ECM 13	Refrigeration Controls	Yes	1,234	0.0	0	$146	$519	$50	$469	3.2	1,242
ECM 14	Vending Machine Control	Yes	6,447	0.7	0	$764	$920	$200	$720	0.9	6,492
TOTALS (COST EFFECTIVE MEASURES)			**654,111**	**135.7**	**-41**	**$77,095**	**$285,673**	**$34,951**	**$250,722**	**3.3**	**653,906**
TOTALS (ALL MEASURES)			**676,531**	**147.8**	**59**	**$80,815**	**$640,924**	**$44,132**	**$596,792**	**7.4**	**688,122**

New Jersey's cleanenergy program™

Cecil Collins Elementary School & Board Offices

#	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_2e Emissions Reduction (lbs)
Lighting Upgrades			**8,526**	**2.7**	**-2**	**$1,079**	**$3,877**	**$1,021**	**$2,856**	**2.6**	**8,389**
ECM 1	Retrofit Fixtures with LED Lamps	Yes	8,526	2.7	-2	$1,079	$3,877	$1,021	$2,856	2.6	8,389
Lighting Control Measures			**27,126**	**5.4**	**-6**	**$3,428**	**$24,071**	**$2,515**	**$21,556**	**6.3**	**26,651**
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	23,653	4.7	-5	$2,989	$20,021	$2,515	$17,506	5.9	23,240
ECM 3	Install High/Low Lighting Controls	Yes	3,472	0.7	-1	$439	$4,050	$0	$4,050	9.2	3,411
Variable Frequency Drive (VFD) Measures			**78,045**	**20.4**	**0**	**$10,035**	**$52,766**	**$5,380**	**$47,386**	**4.7**	**78,591**
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	78,045	20.4	0	$10,035	$52,766	$5,380	$47,386	4.7	78,591
Electric Unitary HVAC Measures			**10,315**	**5.8**	**0**	**$1,326**	**$63,880**	**$2,662**	**$61,218**	**46.2**	**10,388**
ECM 5	Install High Efficiency Air Conditioning Units	No	10,315	5.8	0	$1,326	$63,880	$2,662	$61,218	46.2	10,388
Domestic Water Heating Upgrade			**584**	**0.0**	**27**	**$357**	**$4,562**	**$150**	**$4,412**	**12.3**	**3,730**
ECM 6	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	8	$87	$4,340	$150	$4,190	48.3	964
ECM 7	Install Low-Flow DHW Devices	Yes	584	0.0	19	$271	$222	$0	$222	0.8	2,766
TOTALS (COST EFFECTIVE MEASURES)			**114,281**	**28.4**	**11**	**$14,813**	**$80,937**	**$8,916**	**$72,021**	**4.9**	**116,397**
TOTALS (ALL MEASURES)			**124,597**	**34.2**	**19**	**$16,226**	**$149,158**	**$11,728**	**$137,429**	**8.5**	**127,749**

New Jersey's cleanenergy program™

LILLIAN M. DUNFEE ELEMENTARY SCHOOL

#	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_2e Emissions Reduction (lbs)
Lighting Upgrades			**9,100**	**1.5**	**-1**	**$1,142**	**$3,485**	**$486**	**$2,999**	**2.6**	**9,043**
ECM 1	Retrofit Fixtures with LED Lamps	Yes	9,100	1.5	-1	$1,142	$3,485	$486	$2,999	2.6	9,043
Lighting Control Measures			**19,397**	**3.9**	**-4**	**$2,415**	**$16,910**	**$1,420**	**$15,490**	**6.4**	**19,058**
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	16,213	3.3	-3	$2,018	$13,310	$1,420	$11,890	5.9	15,930
ECM 3	Install High/Low Lighting Controls	Yes	3,184	0.6	-1	$396	$3,600	$0	$3,600	9.1	3,129
Variable Frequency Drive (VFD) Measures			**16,272**	**3.1**	**0**	**$2,061**	**$13,154**	**$600**	**$12,554**	**6.1**	**16,386**
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	7,759	2.1	0	$983	$4,761	$600	$4,161	4.2	7,813
ECM 5	Install VFDs on Heating Water Pumps	Yes	8,513	1.0	0	$1,079	$8,394	$0	$8,394	7.8	8,573
Electric Unitary HVAC Measures			**22,054**	**15.1**	**0**	**$2,794**	**$350,615**	**$7,608**	**$343,007**	**122.8**	**22,208**
ECM 6	Install High Efficiency Air Conditioning Units	No	22,054	15.1	0	$2,794	$350,615	$7,608	$343,007	122.8	22,208
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**146**	**$1,539**	**$53,358**	**$3,200**	**$50,158**	**32.6**	**17,082**
ECM 7	Install High Efficiency Furnaces	No	0	0.0	146	$1,539	$53,358	$3,200	$50,158	32.6	17,082
Domestic Water Heating Upgrade			**0**	**0.0**	**44**	**$468**	**$8,826**	**$300**	**$8,526**	**18.2**	**5,197**
ECM 8	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	13	$138	$8,669	$300	$8,369	60.7	1,530
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	31	$330	$158	$0	$158	0.5	3,667
Food Service & Refrigeration Measures			**1,612**	**0.2**	**0**	**$204**	**$230**	**$50**	**$180**	**0.9**	**1,623**
ECM 10	Vending Machine Control	Yes	1,612	0.2	0	$204	$230	$50	$180	0.9	1,623
TOTALS (COST EFFECTIVE MEASURES)			**46,381**	**8.7**	**26**	**$6,152**	**$33,937**	**$2,556**	**$31,381**	**5.1**	**49,777**
TOTALS (ALL MEASURES)			**68,435**	**23.8**	**185**	**$10,623**	**$446,578**	**$13,664**	**$432,914**	**40.8**	**90,597**

New Jersey's cleanenergy program™

ROBERT L. HORBELT ELEMENTARY SCHOOL

#	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_2e Emissions Reduction (lbs)
Lighting Upgrades			**86,371**	**28.7**	**-16**	**$10,290**	**$79,033**	**$14,532**	**$64,501**	**6.3**	**85,134**
ECM 1	Install LED Fixtures	No	10,534	1.0	0	$1,276	$28,954	$3,100	$25,854	20.3	10,608
ECM 2	Retrofit Fixtures with LED Lamps	Yes	75,837	27.7	-16	$9,014	$50,079	$11,432	$38,647	4.3	74,526
Lighting Control Measures			**8,757**	**2.6**	**-2**	**$1,041**	**$11,801**	**$875**	**$10,926**	**10.5**	**8,604**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	5,648	1.7	-1	$671	$7,178	$875	$6,303	9.4	5,549
ECM 4	Install High/Low Lighting Controls	Yes	3,110	0.9	-1	$370	$4,623	$0	$4,623	12.5	3,055
Variable Frequency Drive (VFD) Measures			**40,538**	**13.7**	**0**	**$4,910**	**$23,559**	**$3,600**	**$19,959**	**4.1**	**40,821**
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	40,538	13.7	0	$4,910	$23,559	$3,600	$19,959	4.1	40,821
Electric Unitary HVAC Measures			**31,729**	**13.3**	**0**	**$3,843**	**$351,172**	**$12,251**	**$338,921**	**88.2**	**31,951**
ECM 6	Install High Efficiency Heat Pumps	No	31,729	13.3	0	$3,843	$351,172	$12,251	$338,921	88.2	31,951
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**73**	**$794**	**$105,885**	**$11,380**	**$94,505**	**119.0**	**8,574**
ECM 7	Install High Efficiency Hot Water Boilers	No	0	0.0	73	$794	$105,885	$11,380	$94,505	119.0	8,574
Food Service & Refrigeration Measures			**1,612**	**0.2**	**0**	**$195**	**$230**	**$50**	**$180**	**0.9**	**1,623**
ECM 8	Vending Machine Control	Yes	1,612	0.2	0	$195	$230	$50	$180	0.9	1,623
TOTALS (COST EFFECTIVE MEASURES)			**126,744**	**44.2**	**-18**	**$15,160**	**$85,669**	**$15,957**	**$69,712**	**4.6**	**125,574**
TOTALS (ALL MEASURES)			**169,007**	**58.5**	**56**	**$21,073**	**$571,679**	**$42,688**	**$528,991**	**25.1**	**176,708**

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JOSEPH DONAHUE ELEMENTARY SCHOOL

#	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_2e Emissions Reduction (lbs)
Lighting Upgrades			**111,678**	**26.3**	**-14**	**$12,970**	**$83,436**	**$13,772**	**$69,664**	**5.4**	**110,827**
ECM 1	Install LED Fixtures	Yes	43,500	5.0	0	$5,108	$48,298	$5,000	$43,298	8.5	43,805
ECM 2	Retrofit Fixtures with LED Lamps	Yes	68,178	21.4	-14	$7,862	$35,138	$8,772	$26,366	3.4	67,023
Lighting Control Measures			**6,290**	**1.6**	**-1**	**$725**	**$4,360**	**$570**	**$3,790**	**5.2**	**6,180**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	6,290	1.6	-1	$725	$4,360	$570	$3,790	5.2	6,180
Variable Frequency Drive (VFD) Measures			**49,462**	**14.0**	**0**	**$5,808**	**$41,559**	**$3,760**	**$37,799**	**6.5**	**49,808**
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	49,462	14.0	0	$5,808	$41,559	$3,760	$37,799	6.5	49,808
Domestic Water Heating Upgrade			**0**	**0.0**	**62**	**$642**	**$11,608**	**$398**	**$11,210**	**17.5**	**7,291**
ECM 5	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	20	$202	$11,500	$398	$11,102	55.0	2,291
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	43	$440	$108	$0	$108	0.2	5,000
Food Service & Refrigeration Measures			**3,224**	**0.4**	**0**	**$379**	**$460**	**$100**	**$360**	**1.0**	**3,246**
ECM 7	Vending Machine Control	Yes	3,224	0.4	0	$379	$460	$100	$360	1.0	3,246
TOTALS (COST EFFECTIVE MEASURES)			**170,654**	**42.3**	**27**	**$20,322**	**$129,922**	**$18,202**	**$111,720**	**5.5**	**175,061**
TOTALS (ALL MEASURES)			**170,654**	**42.3**	**47**	**$20,523**	**$141,423**	**$18,600**	**$122,823**	**6.0**	**177,352**

Solar Energy Generation Potential

	HS	Brackman MS	Collins ES/Offices	Dunfee ES	Horbelt ES	Donahue ES
Potential:	**HIGH**	**MEDIUM**	**MEDIUM**	**HIGH**	**HIGH**	**HIGH**
System Potential: (kW)	358	399	133	121	178	177
Electric Generation: (kWh per year)	426,510	475,357	158,452	144,156	212,064	210,872
Displaced Cost: (per year)	$48,140	$1,348,600	$499,500	$18,260	$462,800	$460,200

SREC Registration Program (SRP):

http://www.NJCleanEnergy.com/SREC

Community Solar Energy Pilot Program:

http://www.NJCleanEnergy.com/CommunitySolar

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Energy Efficient Best Practices

- Reduce Air Leakage
- Close Doors and Windows
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Use Fans to Reduce Cooling Load
- Use Window Treatments/Coverings
- Clean and/or Replace HVAC filters
- Check and Seal Duct Leakage
- Perform Proper Boiler Maintenance
- Perform Proper Water Heater Maintenance
- Plug Load Controls
- Water Conservation

See individual reports for specific EE practices by building

Clean Energy Program Portfolio

Eligible Sectors

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

Incentive Programs

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

Other Programs

Renewable Energy Generation:

- SREC Registration Program (SRP)
- **Community Solar**

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Recommended NJCEP Incentives per Building

Barnegat Twp. Schools	Pay For Performance	Direct Install	SmartStart	CTEEP
Barnegat Township High School	X		X	X
Russell O. Brackman Middle School	X		X	X
Cecil S. Collins Elementary School & Board Offices		X	X	X
Lillian M. Dunfee Elementary School		X	X	X
Robert L. Horbelt Elementary School		X	X	X

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

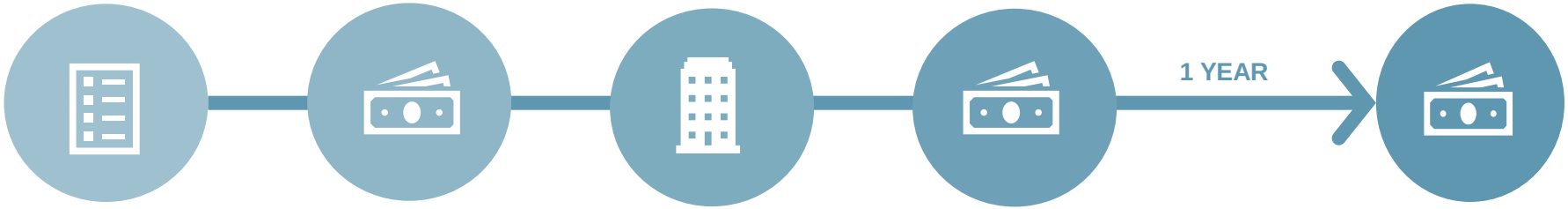
About: Customer choose from a network of pre-approved ***Participating Partners***

Incentives:

- Incentives paid in *three* 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 (or 80% for UEZ/OZ/ MUNI/K-12 Public Schools) up to $2MM per project / $4MM per entity annually
  - Incentive #2 & #3 are doubles for UEZ/OZ/ MUNI/K-12 Public Schools

Pay for Performance

NJCleanEnergy.com/P4P



Program Enrollment

Submission and Approval of Application

Energy Reduction Plan (ERP)

Development and Approval

Incentive #1
fixed

Installation of Measures

Installation Report

Incentive #2
up to 25% project cost

Verification of Savings

Comparison of Performance vs ERP

Incentive #3
up to 25% project cost

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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 ($250K UEZ/OZ/MUNI/K-12 Public Schools), or
- $250,000 entity cap ($4MM UEZ/OZ/MUNI/K-12 Public Schools)

DIRECT INSTALL

NJCleanEnergy.com/DI

Facilities in Urban Enterprise Zones (UEZ), Opportunity Zones (OZ), municipalities, 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

DIRECT INSTALL

NJCleanEnergy.com/DI

Participating Contractor

Hutchinson Mechanical Services
Pete Hatton
856-429-5828 x259
petehatton@hutchbiz.com

Direct Install: Financing Option

- Eligible NJNG customers can *finance the remaining 30 percent balance* at 0% APR through the "SAVEGREEN Project® On-Bill Repayment Program" (OBRP) for 36 months.
- For measures that may not qualify for Direct Install, NJNG also offers financing options for SmartStart that will cover up to $130,000 per year.

New Jersey Natural Gas

- Questions? Contact:

Jerry Ryan
Energy Efficiency Ops. Manager
New Jersey Natural Gas
732-433-4362 (cell)
732 378 4920 (office)
jryan@njng.com

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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 *all* 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

- Lighting & Lighting Controls
- Packaged HVAC
- Boilers & Water Heaters
- Chillers
- VFD's
- Food Service
- Refrigeration

Prescriptive Only:

DOUBLE INCENTIVES FOR OZ/UEZ/ MUNI/K-12 PUBLIC SCHOOLS

Custom Incentives

- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Projects must have a minimum first year energy savings of 75,000 kWh or 1,500 therms
- Project pre and post inspection required

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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:

- $250,000 fiscal year entity cap
- Technical assistance incentives for custom project evaluation (up to $10K)

SAME INCENTIVE VALUES AS SMARTSTART

New Jersey's cleanenergy program™

SmartStart & CTEEP: Financing Option

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

New Jersey Natural Gas

- Questions? Contact:

Jerry Ryan
Energy Efficiency Ops. Manager
New Jersey Natural Gas
732-433-4362 (cell)
732 378 4920 (office)
jryan@njng.com

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Combined Heat & Power - Fuel Cells

NJCleanEnergy.com/CHP

What is CHP: Combined Heat & Power (CHP) units generates electricity and recycle waste heat to provide heating and/or cooling

About:

- Fuel Cells (FC) with or without heat recovery (HR)
- Resiliency with Return on Investment
- Technology-neutral incentives

Incentives:

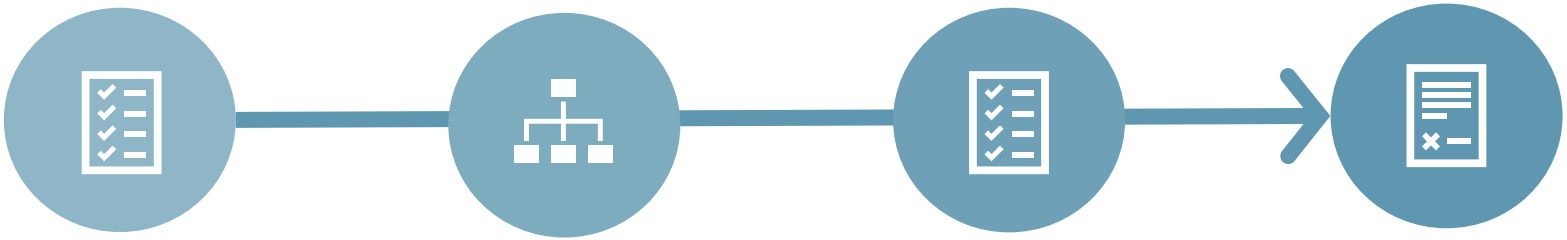
- 30/50/20 Incentive payment
  - 30% when equipment purchased
  - 50% when system installed
  - 20% upon confirmation that the project is achieving the required performance

FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the BPU
- Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract
- Requires NO new bonding and is outside of capital budget
- Does not count as debt or require voter approval

Financing Mechanism: ESIP



Initial Energy Audit

Includes LGEA

Select Path

ESCO (requires RFP)
Hybrid
DIY

Investment Grade Energy Audit

Energy Savings Plan Developed & Approved

Plan includes use of incentives through New Jersey's Clean Energy Program

For More Information

Visit NJCleanEnergy.com

Call (732) 855-0033

Tony O'Donnell

Regional Outreach Manager

732.259.4938

aodonnell@trccompanies.com

New Jersey's cleanenergy program™

QUESTIONS

?