New Jersey's Clean Energy Program

LGEA Presentation

Avalon Borough & Elementary School

May 28, 2020

New Jersey's cleanenergy program™

TRC

INTRODUCTIONS

- *Avalon Borough*
  - Scott Wahl – Business Administrator
  - Jim Craft – Chief Financial Officer
  - *Avalon Elementary School*
  - Stacey Tracy – Superintendent
  - Linda Fiori – Business Administrator
- *NJ Clean Energy Program*
  - Yagna Otia – TRC Auditor
  - Amanda Muench – TRC Account Manager
  - Gary Finger – TRC Outreach 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 Avalon Borough & Elementary School

LGEA Process

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

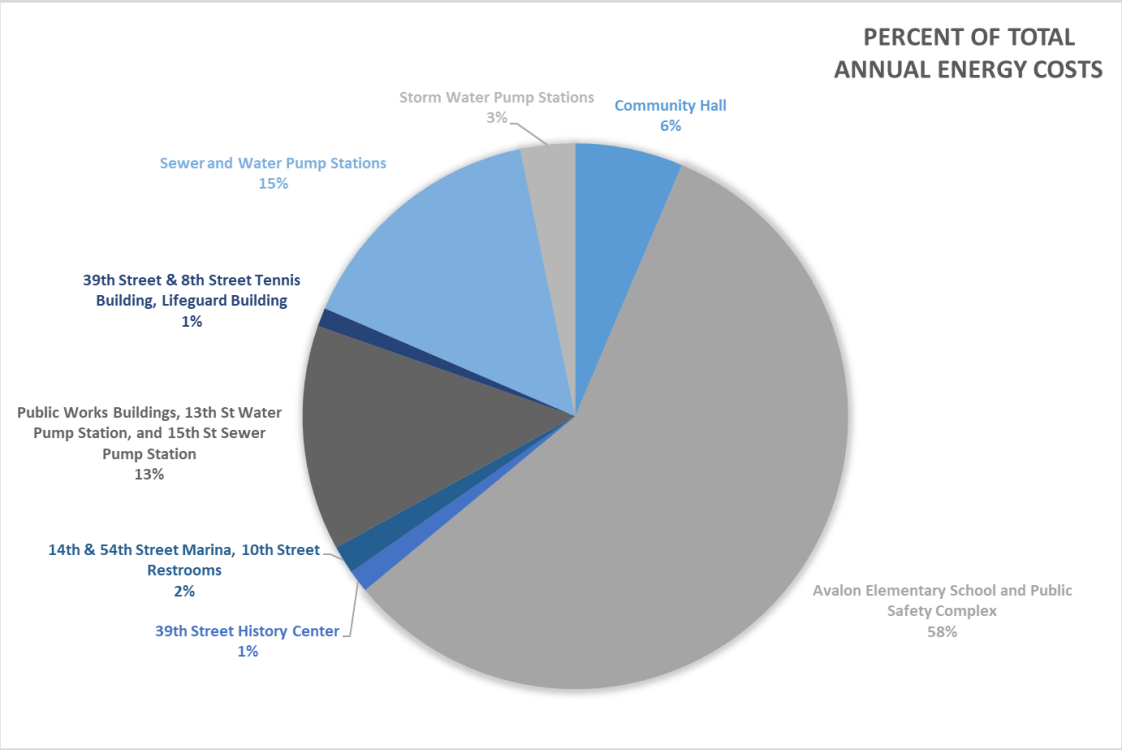
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

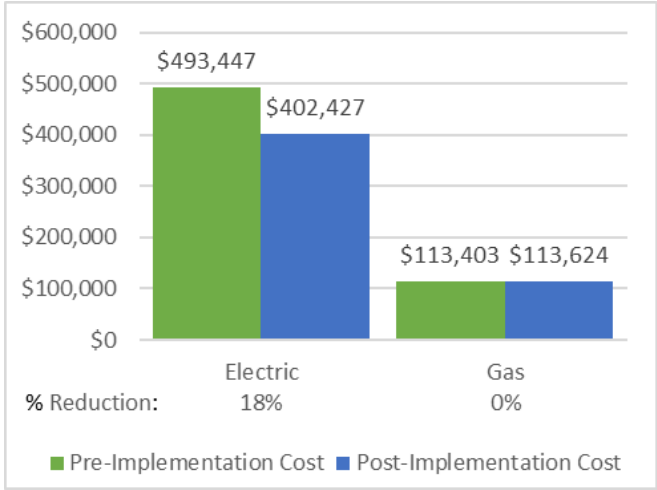
- Avalon Elementary School + sites on shared central plant
- Public Works Building
- 13 Street and 15th Street Pump Stations
- Community Hall
- 39th and 8th Street Tennis Building
- Lifeguard Building
- 14th and 54th Street Marina
- 10th and Dune Dr. Public Restroom
- 39th Street History Center
- Pump, Sewer, and Storm Water Stations

Utility Breakout

Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



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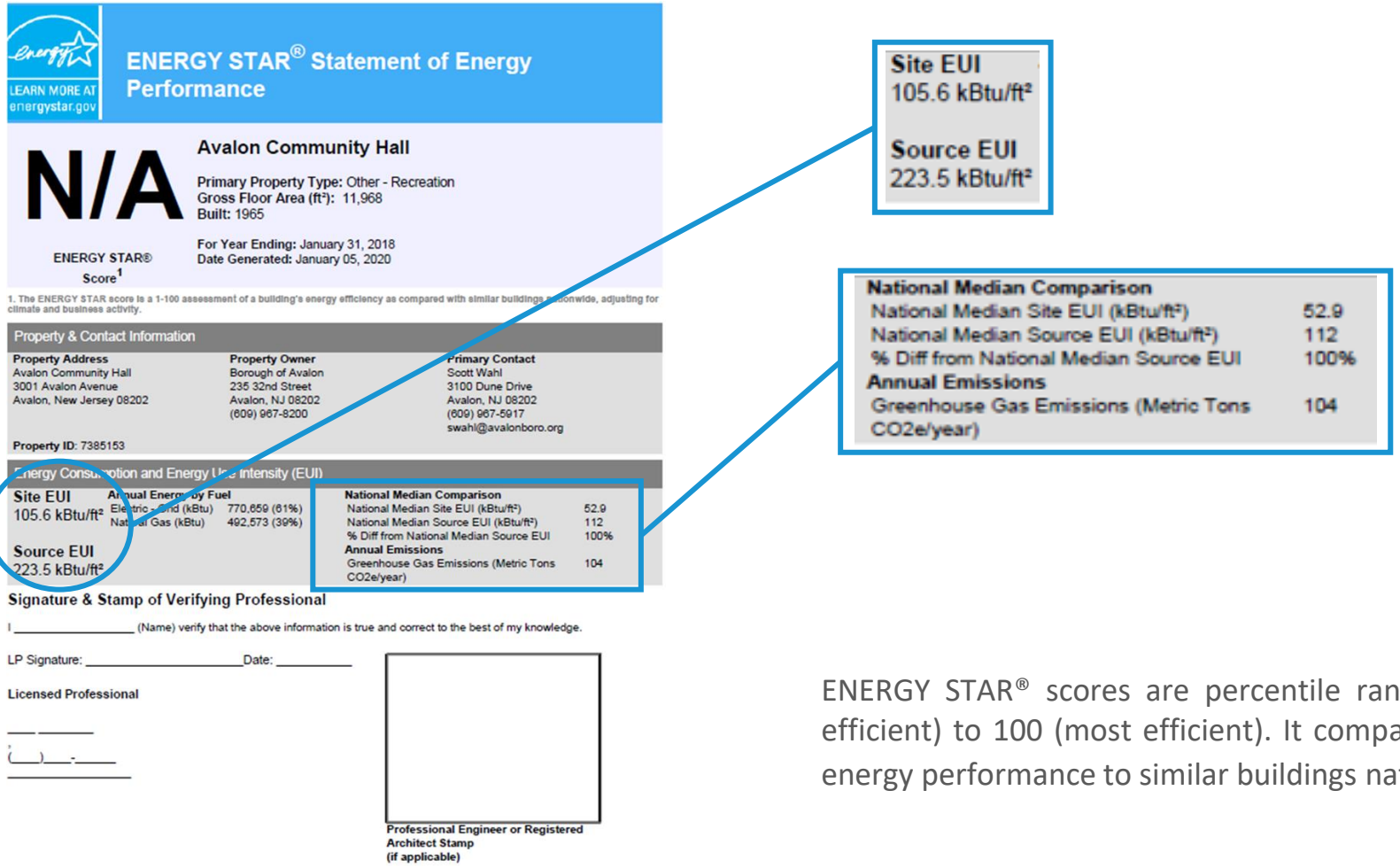
BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

N/A

ENERGY STAR® Score[1]

Avalon Community Hall

Primary Property Type: Other - Recreation
Gross Floor Area (ft²): 11,968
Built: 1965

For Year Ending: January 31, 2018
Date Generated: January 05, 2020

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
Avalon Community Hall 3001 Avalon Avenue Avalon, New Jersey 08202	Borough of Avalon 235 32nd Street Avalon, NJ 08202 (609) 967-8200	Scott Wahl 3100 Dune Drive Avalon, NJ 08202 (609) 967-5917 swahl@avalonboro.org

Property ID: 7385153

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
105.6 kBtu/ft²

Source EUI
223.5 kBtu/ft²

Annual Energy by Fuel

Electric Grid (kBtu)	770,659 (61%)
Natural Gas (kBtu)	492,573 (39%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	52.9
National Median Source EUI (kBtu/ft²)	112
% Diff from National Median Source EUI	100%
Annual Emissions	
Greenhouse Gas Emissions (Metric Tons CO2e/year)	104

Signature & Stamp of Verifying Professional

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

LP Signature: _____ Date: _____

Licensed Professional

___ _____

(___)___-____

_____

Professional Engineer or Registered Architect Stamp (if applicable)

Site EUI
105.6 kBtu/ft²

Source EUI
223.5 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	52.9
National Median Source EUI (kBtu/ft²)	112
% Diff from National Median Source EUI	100%
Annual Emissions	
Greenhouse Gas Emissions (Metric Tons CO2e/year)	104

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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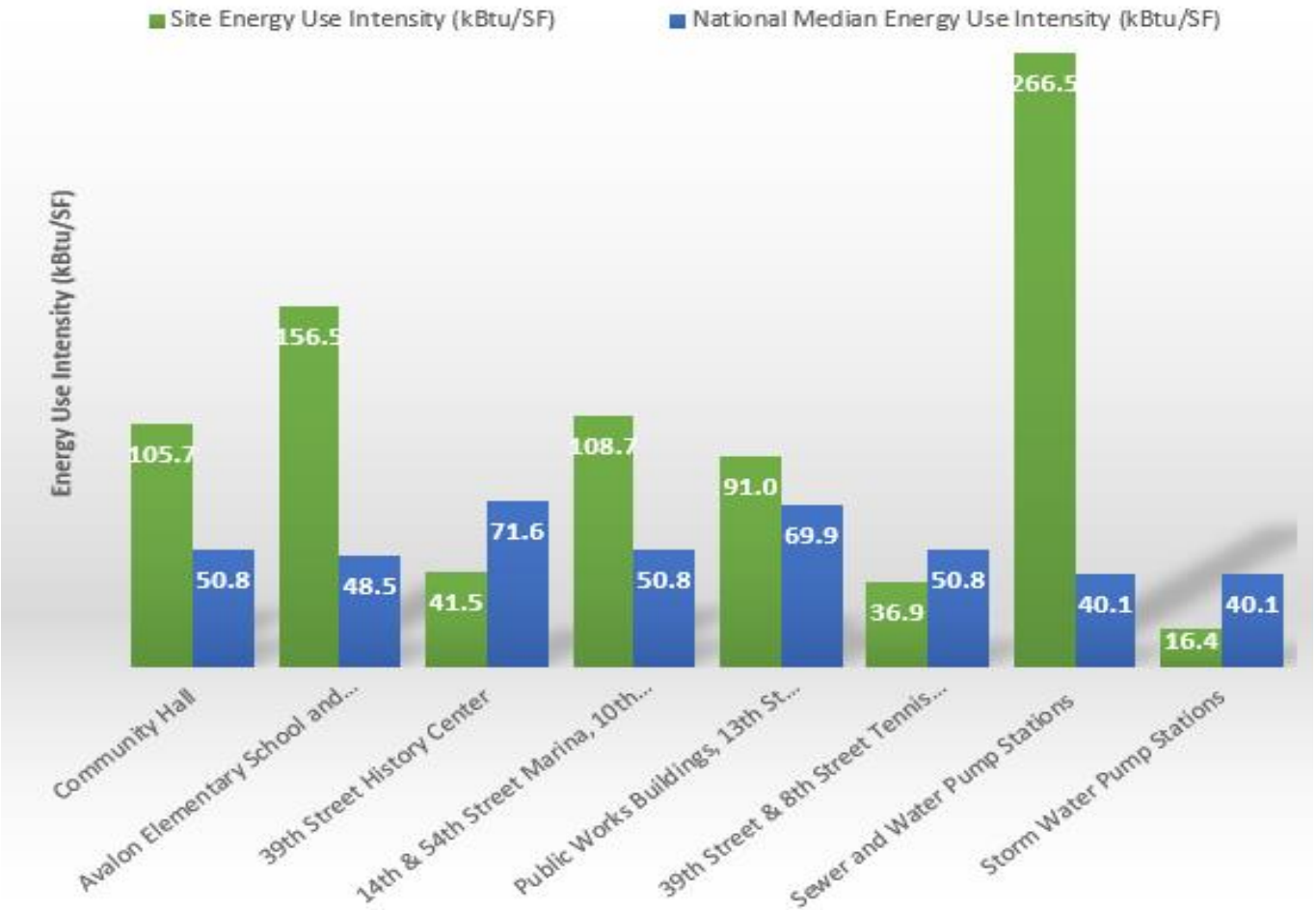
BENCHMARKING



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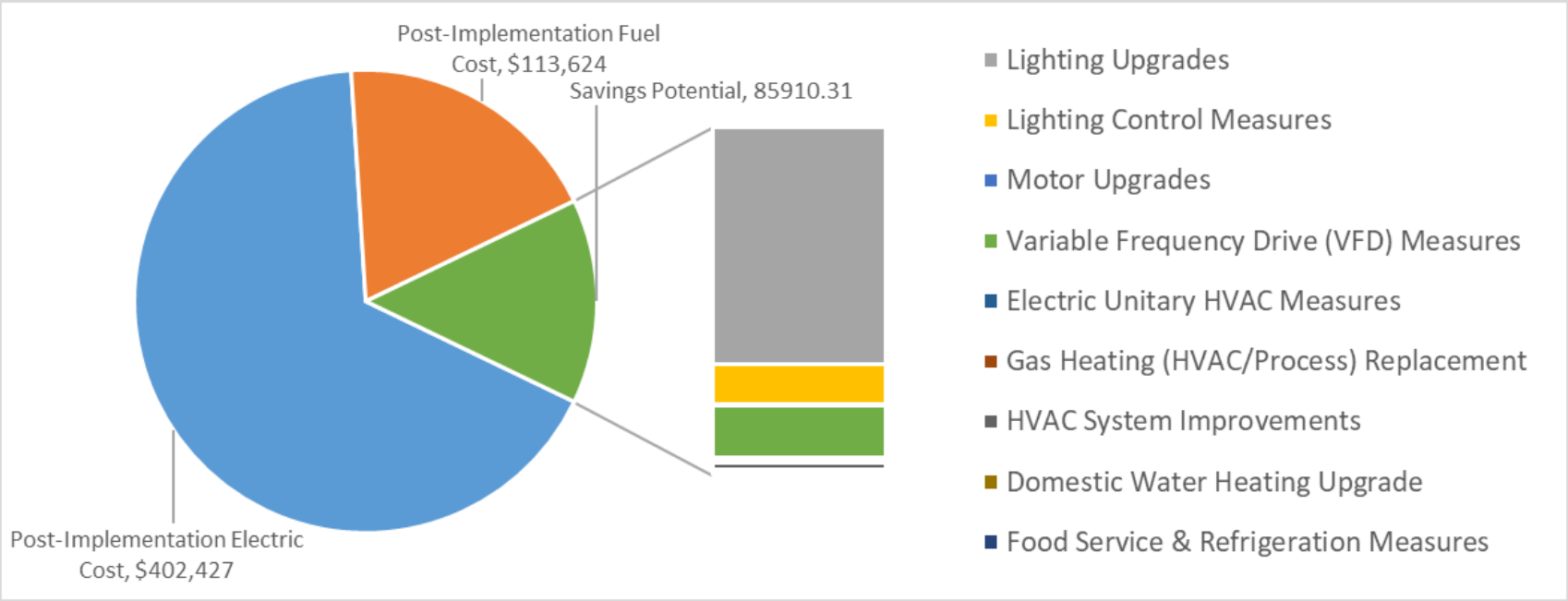
All Opportunities

Savings Potential

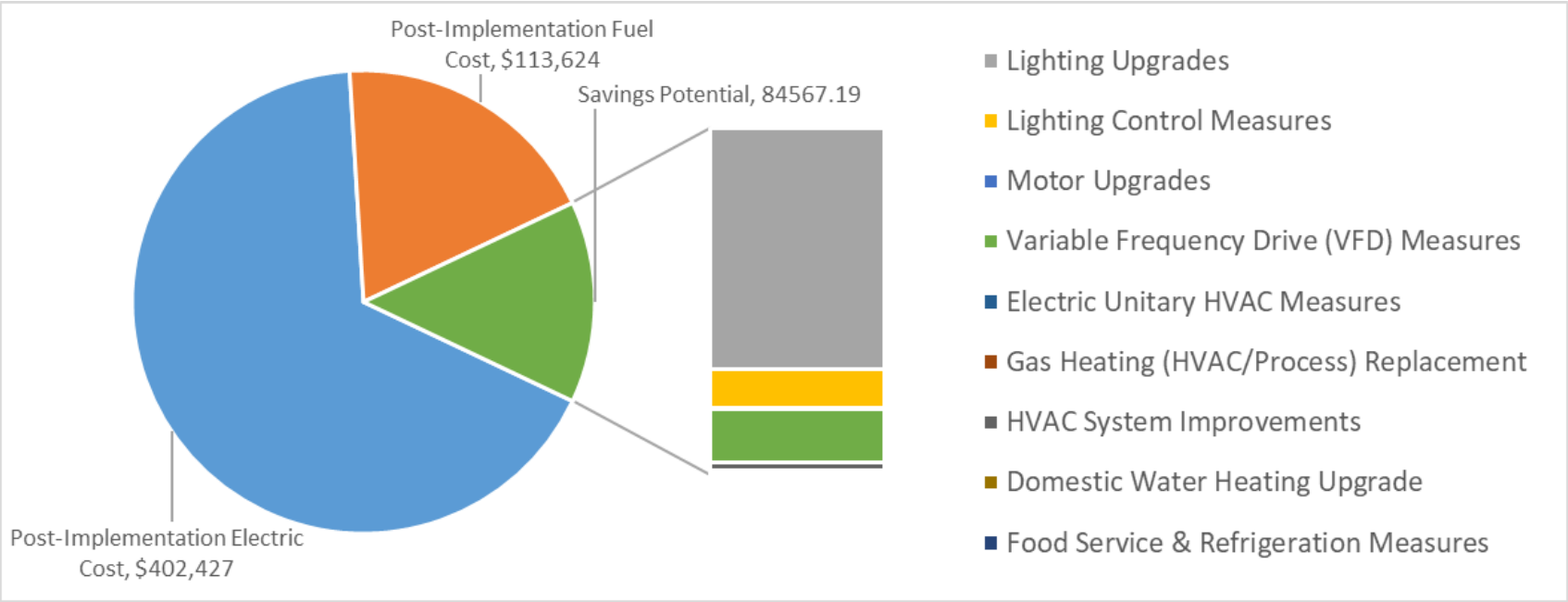


ALL OPPORTUNITIES

#	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		**439,636**	**61.7**	**-75.1**	**$58,551**	**$211,159**	**$63,448**	**$147,711**	**2.5**	**433,920**
ECM 1	Install LED Fixtures	138,700	10.1	-14.1	$18,792	$123,853	$26,940	$96,913	5.2	138,013
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	20,470	7.1	-4.3	$3,282	$10,508	$2,930	$7,578	2.3	20,113
ECM 3	Retrofit Fixtures with LED Lamps	280,467	44.5	-56.7	$36,476	$76,797	$33,578	$43,219	1.2	275,794
Lighting Control Measures		**78,450**	**12.6**	**-16.4**	**$9,940**	**$72,457**	**$19,580**	**$52,877**	**5.3**	**77,081**
ECM 4	Install Occupancy Sensor Lighting Controls	70,152	11.6	-14.6	$8,913	$66,382	$14,200	$52,182	5.9	68,930
ECM 5	Install High/Low Lighting Controls	8,298	1.0	-1.7	$1,027	$6,075	$5,380	$695	0.7	8,152
Motor Upgrades		**1,971**	**0.2**	**0.0**	**$245**	**$2,308**	**$0**	**$2,308**	**9.4**	**1,985**
ECM 6	Premium Efficiency Motors	1,971	0.2	0.0	$245	$2,308	$0	$2,308	9.4	1,985
Variable Frequency Drive (VFD) Measures		**98,479**	**20.3**	**14.9**	**$12,969**	**$88,686**	**$20,050**	**$68,636**	**5.3**	**100,918**
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	78,350	14.7	0.0	$9,725	$62,160	$11,700	$50,460	5.2	78,898
ECM 8	Install VFDs on Constant Volume (CV) Fans	2,739	0.9	0.0	$419	$3,812	$400	$3,412	8.2	2,758
ECM 9	Install Air Compressors with VFDs	14,549	4.7	0.0	$2,223	$19,431	$7,800	$11,631	5.2	14,650
ECM 10	Install VFDs on Kitchen Hood Fan Motors	2,841	0.0	14.9	$602	$3,283	$150	$3,133	5.2	4,612
Electric Unitary HVAC Measures		**3,030**	**2.6**	**0.0**	**$710**	**$19,197**	**$2,361**	**$16,836**	**23.7**	**3,051**
ECM 11	Install High Efficiency Air Conditioning Units	3,030	2.6	0.0	$710	$19,197	$2,361	$16,836	23.7	3,051
Electric Chiller Replacement		**0**	**0.0**	**0.0**	**$0**	**$0**	**$0**	**$0**	**0.0**	**0**
Gas Heating (HVAC/Process) Replacement		**0**	**0.0**	**29.1**	**$407**	**$16,881**	**$2,144**	**$14,737**	**36.2**	**3,405**
ECM 12	Install High Efficiency Furnaces	0	0.0	15.4	$236	$2,855	$2,144	$711	3.0	1,805
ECM 13	Install High Efficiency Unit Heaters	0	0.0	13.7	$172	$14,026	$0	$14,026	81.7	1,600
HVAC System Improvements		**7,025**	**0.0**	**6.6**	**$1,794**	**$990**	**$0**	**$990**	**0.6**	**7,851**
ECM 14	Install Programmable Thermostats	7,025	0.0	6.6	$1,794	$990	$0	$990	0.6	7,851
Domestic Water Heating Upgrade		**3,148**	**0.0**	**22.9**	**$747**	**$4,439**	**$753**	**$3,686**	**4.9**	**5,852**
ECM 15	Install High Efficiency Gas-Fired Water Heater	0	0.0	3.4	$45	$3,959	$273	$3,686	81.2	404
ECM 16	Install Low-Flow DHW Devices	3,148	0.0	19.5	$701	$480	$480	$0	0.0	5,448
Food Service & Refrigeration Measures		**3,828**	**0.4**	**0.0**	**$549**	**$993**	**$280**	**$713**	**1.3**	**3,855**
ECM 17	Refrigerator/Freezer Case Electrically Commutated Motors	262	0.0	0.0	$50	$303	$80	$223	4.5	264
ECM 18	Vending Machine Control	3,566	0.4	0.0	$499	$690	$200	$490	1.0	3,591
TOTALS		**635,567**	**97.8**	**-17.9**	**$85,910**	**$417,108**	**$108,616**	**$308,492**	**3.6**	**637,919**

Cost Effective Opportunities

Savings Potential



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		**439,513**	**61.1**	**-75.1**	**$58,529**	**$210,052**	**$63,088**	**$146,964**	**2.5**	**433,796**
ECM 1	Install LED Fixtures	138,700	10.1	-14.1	$18,792	$123,853	$26,940	$96,913	5.2	138,013
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	20,347	6.5	-4.3	$3,261	$9,402	$2,570	$6,832	2.1	19,989
ECM 3	Retrofit Fixtures with LED Lamps	280,467	44.5	-56.7	$36,476	$76,797	$33,578	$43,219	1.2	275,794
Lighting Control Measures		**76,830**	**11.8**	**-16.0**	**$9,541**	**$64,440**	**$18,210**	**$46,230**	**4.8**	**75,490**
ECM 4	Install Occupancy Sensor Lighting Controls	68,559	10.9	-14.3	$8,521	$58,590	$12,830	$45,760	5.4	67,365
ECM 5	Install High/Low Lighting Controls	8,271	1.0	-1.7	$1,020	$5,850	$5,380	$470	0.5	8,126
Motor Upgrades		**1,971**	**0.2**	**0.0**	**$245**	**$2,308**	**$0**	**$2,308**	**9.4**	**1,985**
ECM 6	Premium Efficiency Motors	1,971	0.2	0.0	$245	$2,308	$0	$2,308	9.4	1,985
Variable Frequency Drive (VFD) Measures		**98,479**	**20.3**	**14.9**	**$12,969**	**$88,686**	**$20,050**	**$68,636**	**5.3**	**100,918**
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	78,350	14.7	0.0	$9,725	$62,160	$11,700	$50,460	5.2	78,898
ECM 8	Install VFDs on Constant Volume (CV) Fans	2,739	0.9	0.0	$419	$3,812	$400	$3,412	8.2	2,758
ECM 9	Install Air Compressors with VFDs	14,549	4.7	0.0	$2,223	$19,431	$7,800	$11,631	5.2	14,650
ECM 10	Install VFDs on Kitchen Hood Fan Motors	2,841	0.0	14.9	$602	$3,283	$150	$3,133	5.2	4,612
Gas Heating (HVAC/Process) Replacement		**0**	**0.0**	**15.4**	**$236**	**$2,855**	**$2,144**	**$711**	**3.0**	**1,805**
ECM 12	Install High Efficiency Furnaces	0	0.0	15.4	$236	$2,855	$2,144	$711	3.0	1,805
ECM 13	Install High Efficiency Unit Heaters	0	0.0	0.0	$0	$0	$0	$0	0.0	0
HVAC System Improvements		**7,025**	**0.0**	**6.6**	**$1,794**	**$990**	**$0**	**$990**	**0.6**	**7,851**
ECM 14	Install Programmable Thermostats	7,025	0.0	6.6	$1,794	$990	$0	$990	0.6	7,851
Domestic Water Heating Upgrade		**3,148**	**0.0**	**22.9**	**$747**	**$4,439**	**$753**	**$3,686**	**4.9**	**5,852**
ECM 16	Install Low-Flow DHW Devices	3,148	0.0	19.5	$701	$480	$480	$0	0.0	5,448
Food Service & Refrigeration Measures		**3,828**	**0.4**	**0.0**	**$549**	**$993**	**$280**	**$713**	**1.3**	**3,855**
ECM 17	Refrigerator/Freezer Case Electrically Commutated Motors	262	0.0	0.0	$50	$303	$80	$223	4.5	264
ECM 18	Vending Machine Control	3,566	0.4	0.0	$499	$690	$200	$490	1.0	3,591
TOTALS		**633,825**	**96.4**	**-31.2**	**$85,317**	**$393,959**	**$106,886**	**$287,073**	**3.4**	**634,604**

AVALON 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			**333,585**	**41.9**	**-62**	**$40,658**	**$126,954**	**$40,848**	**$86,106**	**2.1**	**328,675**
ECM 1	Install LED Fixtures	Yes	98,861	10.1	-14	$12,100	$71,581	$16,340	$55,241	4.6	97,896
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	13,437	2.0	-3	$1,634	$3,767	$902	$2,865	1.8	13,202
ECM 3	Retrofit Fixtures with LED Lamps	Yes	221,286	29.8	-45	$26,924	$51,605	$23,606	$27,999	1.0	217,577
Lighting Control Measures			**69,069**	**9.9**	**-14**	**$8,399**	**$53,472**	**$15,285**	**$38,187**	**4.5**	**67,861**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	61,160	9.0	-13	$7,437	$48,522	$10,790	$37,732	5.1	60,091
ECM 5	Install High/Low Lighting Controls	Yes	7,908	0.9	-2	$962	$4,950	$4,495	$455	0.5	7,770
Motor Upgrades			**1,971**	**0.2**	**0**	**$245**	**$2,308**	**$0**	**$2,308**	**9.4**	**1,985**
ECM 6	Premium Efficiency Motors	Yes	1,971	0.2	0	$245	$2,308	$0	$2,308	9.4	1,985
Variable Frequency Drive (VFD) Measures			**78,350**	**14.7**	**0**	**$9,725**	**$62,160**	**$11,700**	**$50,460**	**5.2**	**78,898**
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	Yes	78,350	14.7	0	$9,725	$62,160	$11,700	$50,460	5.2	78,898
Domestic Water Heating Upgrade			**2,453**	**0.0**	**12**	**$453**	**$315**	**$315**	**$0**	**0.0**	**3,908**
ECM 8	Install Low-Flow DHW Devices	Yes	2,453	0.0	12	$453	$315	$315	$0	0.0	3,908
Food Service & Refrigeration Measures			**1,612**	**0.2**	**0**	**$200**	**$230**	**$100**	**$130**	**0.6**	**1,623**
ECM 9	Vending Machine Control	Yes	1,612	0.2	0	$200	$230	$100	$130	0.6	1,623
TOTALS (COST EFFECTIVE MEASURES)			**487,039**	**66.8**	**-64**	**$59,679**	**$245,439**	**$68,248**	**$177,190**	**3.0**	**482,950**
TOTALS (ALL MEASURES)			**487,039**	**66.8**	**-64**	**$59,679**	**$245,439**	**$68,248**	**$177,190**	**3.0**	**482,950**

BPU New Jersey's cleanenergy program™

PUBLIC WORKS 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_2e Emissions Reduction (lbs)
Lighting Upgrades			**50,708**	**7.0**	**-6**	**$7,670**	**$44,377**	**$12,394**	**$31,983**	**4.2**	**50,321**
ECM 1	Install LED Fixtures	Yes	21,668	0.0	0	$3,312	$28,661	$5,420	$23,241	7.0	21,820
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	368	0.2	0	$55	$275	$80	$195	3.5	361
ECM 3	Retrofit Fixtures with LED Lamps	Yes	28,671	6.9	-6	$4,303	$15,441	$6,894	$8,547	2.0	28,141
Lighting Control Measures			**4,012**	**1.0**	**-1**	**$603**	**$7,162**	**$1,650**	**$5,512**	**9.1**	**3,948**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	3,694	0.9	-1	$555	$6,712	$1,200	$5,512	9.9	3,635
ECM 5	Install High/Low Lighting Controls	Yes	318	0.1	0	$48	$450	$450	$0	0.0	312
Variable Frequency Drive (VFD) Measures			**17,287**	**5.6**	**0**	**$2,642**	**$23,243**	**$8,200**	**$15,043**	**5.7**	**17,408**
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	2,739	0.9	0	$419	$3,812	$400	$3,412	8.2	2,758
ECM 7	Install Air Compressors with VFDs	Yes	14,549	4.7	0	$2,223	$19,431	$7,800	$11,631	5.2	14,650
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**14**	**$172**	**$14,026**	**$0**	**$14,026**	**81.7**	**1,600**
ECM 8	Install High Efficiency Unit Heaters	No	0	0.0	14	$172	$14,026	$0	$14,026	81.7	1,600
Domestic Water Heating Upgrade			**0**	**0.0**	**5**	**$59**	**$2,059**	**$169**	**$1,890**	**31.8**	**554**
ECM 9	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	3	$41	$2,030	$140	$1,890	46.6	377
ECM 10	Install Low-Flow DHW Devices	Yes	0	0.0	2	$19	$29	$29	$0	0.0	176
Food Service & Refrigeration Measures			**1,954**	**0.2**	**0**	**$299**	**$460**	**$100**	**$360**	**1.2**	**1,968**
ECM 11	Vending Machine Control	Yes	1,954	0.2	0	$299	$460	$100	$360	1.2	1,968
TOTALS (COST EFFECTIVE MEASURES)			**73,961**	**13.8**	**-6**	**$11,233**	**$75,271**	**$22,373**	**$52,899**	**4.7**	**73,822**
TOTALS (ALL MEASURES)			**73,961**	**13.8**	**11**	**$11,445**	**$91,327**	**$22,513**	**$68,815**	**6.0**	**75,799**

New Jersey's cleanenergy program™

COMMUNITY 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_2e Emissions Reduction (lbs)
Lighting Upgrades			**22,348**	**4.3**	**-4**	**$3,155**	**$9,596**	**$2,740**	**$6,856**	**2.2**	**22,009**
ECM 1	Install LED Fixtures	Yes	2,505	0.0	0	$360	$3,864	$800	$3,064	8.5	2,523
ECM 2	Retrofit Fixtures with LED Lamps	Yes	19,843	4.3	-4	$2,795	$5,733	$1,940	$3,793	1.4	19,487
Lighting Control Measures			**3,562**	**0.7**	**-1**	**$502**	**$2,970**	**$770**	**$2,200**	**4.4**	**3,498**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	3,562	0.7	-1	$502	$2,970	$770	$2,200	4.4	3,498
Variable Frequency Drive (VFD) Measures			**2,841**	**0.0**	**15**	**$602**	**$3,283**	**$150**	**$3,133**	**5.2**	**4,612**
ECM 4	Install VFDs on Kitchen Hood Fan Motors	Yes	2,841	0.0	15	$602	$3,283	$150	$3,133	5.2	4,612
Domestic Water Heating Upgrade			**417**	**0.0**	**1**	**$78**	**$57**	**$57**	**$0**	**0.0**	**583**
ECM 5	Install Low-Flow DHW Devices	Yes	417	0.0	1	$78	$57	$57	$0	0.0	583
TOTALS (COST EFFECTIVE MEASURES)			**29,169**	**5.0**	**11**	**$4,337**	**$15,907**	**$3,717**	**$12,189**	**2.8**	**30,703**
TOTALS (ALL MEASURES)			**29,169**	**5.0**	**11**	**$4,337**	**$15,907**	**$3,717**	**$12,189**	**2.8**	**30,703**

39TH STREET TENNIS 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_2e Emissions Reduction (lbs)
Lighting Upgrades			**8,466**	**3.0**	**-1**	**$2,141**	**$8,325**	**$2,148**	**$6,177**	**2.9**	**8,385**
ECM 1	Install LED Fixtures	Yes	827	0.0	0	$211	$3,864	$800	$3,064	14.5	833
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	4,873	2.5	-1	$1,227	$3,507	$988	$2,519	2.1	4,788
ECM 3	Retrofit Fixtures with LED Lamps	Yes	2,765	0.5	0	$703	$954	$360	$594	0.8	2,764
Lighting Control Measures			**1,002**	**0.5**	**0**	**$252**	**$4,275**	**$840**	**$3,435**	**13.6**	**984**
ECM 4	Install Occupancy Sensor Lighting Controls	No	975	0.5	0	$246	$4,050	$840	$3,210	13.1	958
ECM 5	Install High/Low Lighting Controls	No	27	0.0	0	$7	$225	$0	$225	33.7	26
Domestic Water Heating Upgrade			**278**	**0.0**	**1**	**$85**	**$29**	**$29**	**$0**	**0.0**	**391**
ECM 6	Install Low-Flow DHW Devices	Yes	278	0.0	1	$85	$29	$29	$0	0.0	391
TOTALS (COST EFFECTIVE MEASURES)			**8,744**	**3.0**	**0**	**$2,226**	**$8,354**	**$2,177**	**$6,177**	**2.8**	**8,776**
TOTALS (ALL MEASURES)			**9,746**	**3.6**	**0**	**$2,478**	**$12,629**	**$3,017**	**$9,612**	**3.9**	**9,760**

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14TH STREET MARINA

#	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			**16,188**	**1.6**	**0**	**$3,067**	**$17,300**	**$3,794**	**$13,506**	**4.4**	**16,264**
ECM 1	Install LED Fixtures	Yes	14,189	0.0	0	$2,694	$15,383	$3,180	$12,203	4.5	14,289
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,001	1.3	0	$185	$1,203	$400	$803	4.3	982
ECM 3	Retrofit Fixtures with LED Lamps	Yes	998	0.3	0	$187	$714	$214	$500	2.7	993
Lighting Control Measures			**143**	**0.2**	**0**	**$26**	**$386**	**$70**	**$316**	**12.0**	**140**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	143	0.2	0	$26	$386	$70	$316	12.0	140
Electric Unitary HVAC Measures			**401**	**0.8**	**0**	**$76**	**$3,486**	**$429**	**$3,057**	**40.1**	**404**
ECM 5	Install High Efficiency Air Conditioning Units	No	401	0.8	0	$76	$3,486	$429	$3,057	40.1	404
Domestic Water Heating Upgrade			**0**	**0.0**	**2**	**$52**	**$36**	**$36**	**$0**	**0.0**	**278**
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	2	$52	$36	$36	$0	0.0	278
Food Service & Refrigeration Measures			**262**	**0.0**	**0**	**$50**	**$303**	**$80**	**$223**	**4.5**	**264**
ECM 7	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	262	0.0	0	$50	$303	$80	$223	4.5	264
TOTALS (COST EFFECTIVE MEASURES)			**16,593**	**1.8**	**2**	**$3,195**	**$18,025**	**$3,980**	**$14,045**	**4.4**	**16,946**
TOTALS (ALL MEASURES)			**16,995**	**2.6**	**2**	**$3,271**	**$21,511**	**$4,409**	**$17,103**	**5.2**	**17,350**

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39TH STREET HISTORY 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_2e Emissions Reduction (lbs)
Lighting Upgrades			**6,219**	**2.6**	**-1**	**$1,481**	**$1,965**	**$406**	**$1,559**	**1.1**	**6,128**
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	668	0.5	0	$159	$649	$200	$449	2.8	656
ECM 2	Retrofit Fixtures with LED Lamps	Yes	5,551	2.1	-1	$1,322	$1,315	$206	$1,109	0.8	5,472
Lighting Control Measures			**662**	**0.3**	**0**	**$157**	**$4,192**	**$965**	**$3,227**	**20.5**	**651**
ECM 3	Install Occupancy Sensor Lighting Controls	No	617	0.3	0	$147	$3,742	$530	$3,212	21.9	607
ECM 4	Install High/Low Lighting Controls	Yes	44	0.0	0	$11	$450	$435	$15	1.4	44
Electric Unitary HVAC Measures			**2,629**	**1.8**	**0**	**$633**	**$15,710**	**$1,932**	**$13,778**	**21.8**	**2,647**
ECM 5	Install High Efficiency Air Conditioning Units	No	2,629	1.8	0	$633	$15,710	$1,932	$13,778	21.8	2,647
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**15**	**$236**	**$2,855**	**$2,144**	**$711**	**3.0**	**1,805**
ECM 6	Install High Efficiency Furnaces	Yes	0	0.0	15	$236	$2,855	$2,144	$711	3.0	1,805
HVAC System Improvements			**7,025**	**0.0**	**7**	**$1,794**	**$990**	**$0**	**$990**	**0.6**	**7,851**
ECM 7	Install Programmable Thermostats	Yes	7,025	0.0	7	$1,794	$990	$0	$990	0.6	7,851
Domestic Water Heating Upgrade			**0**	**0.0**	**1**	**$15**	**$14**	**$14**	**$0**	**0.0**	**111**
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	1	$15	$14	$14	$0	0.0	111
TOTALS (COST EFFECTIVE MEASURES)			**13,288**	**2.6**	**22**	**$3,536**	**$6,273**	**$2,999**	**$3,274**	**0.9**	**15,939**
TOTALS (ALL MEASURES)			**16,534**	**4.7**	**22**	**$4,316**	**$25,726**	**$5,461**	**$20,265**	**4.7**	**19,193**

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12TH STREET WATER STATION

#	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)
ighting Upgrades			**2,120**	**1.3**	**0**	**$378**	**$2,607**	**$1,114**	**$1,493**	**4.0**	**2,135**
ECM 1	Install LED Fixtures	Yes	648	0.0	0	$115	$500	$400	$100	0.9	653
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	No	123	0.6	0	$22	$1,107	$360	$747	34.1	124
ECM 3	Retrofit Fixtures with LED Lamps	Yes	1,349	0.6	0	$240	$1,000	$354	$646	2.7	1,358
TOTALS (COST EFFECTIVE MEASURES)			**1,997**	**0.6**	**0**	**$356**	**$1,500**	**$754**	**$746**	**2.1**	**2,011**
TOTALS (ALL MEASURES)			**2,120**	**1.3**	**0**	**$378**	**$2,607**	**$1,114**	**$1,493**	**4.0**	**2,135**

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21ST STREET STORM WATER PUMP

#	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			**3**	**0.0**	**0**	**$1**	**$34**	**$4**	**$30**	**25.1**	**3**
ECM 1	Retrofit Fixtures with LED Lamps	Yes	3	0.0	0	$1	$34	$4	$30	25.1	3
TOTALS (COST EFFECTIVE MEASURES)			**3**	**0.0**	**0**	**$1**	**$34**	**$4**	**$30**	**25.1**	**3**
TOTALS (ALL MEASURES)			**3**	**0.0**	**0**	**$1**	**$34**	**$4**	**$30**	**25.1**	**3**

New Jersey's cleanenergy program™

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

- Retro-Commissioning Study
- Upgrade/Replace Energy Management System
- Installation of an Energy Management System
- Electric Submeter
- Ozone Laundry System
- Pool Heating System Upgrades
- Eliminate Oversized Domestic Hot Water Heating Systems
- Heating System Conversion from Steam to Hot Water
- Upgrade to a Heat Pump System
- Vestibule Revolving Doors
- Window Replacements
- Disaggregate Boiler System

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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Solar Energy Generation Potential

	Avalon ES	Public Works	Community Hall
Potential:	**HIGH**	**HIGH**	**MEDIUM**
System Potential: (kW)	429	148	57
Electric Generation: (kWh per year)	511,098	176,323	67,908
Displaced Cost: (per year)	$63,440	$26,950	$148,200

Community Solar Energy Pilot Program:

http://www.NJCleanEnergy.com/CommunitySolar

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Recommended NJCEP Incentives per Building

Avalon Borough & ES	Direct Install	SmartStart	CTEEP
Avalon Elementary School + Borough Hall, Public Safety, Senior Center, Rescue Squad, Firehouse, 30th Street Water and Sewer	X	X	X
Public Works Building, 13th St., + 15th St. Pump Station	X	X	X
Community Hall	X	X	X
39th Street Tennis Building, 8th St. Tennis + Lifeguard Building	X	X	X
14th Street Marina, 54th St. Marina, 10th & Dune Restroom	X	X	X
39th Street History Center	X	X	X
12 St. Pump Station	X	X	X
21st St. Storm Water Pump	X	X	X

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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/ Local Govt.I/K-12 Public Schools), or
- $250,000 entity cap ($4MM UEZ/OZ/Local Govt./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

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DIRECT INSTALL

NJCleanEnergy.com/DI

Participating Contractor

Hutchinson Mechanical Services
Pete Hatton
856-429-5828 x259
petehatton@hutchbiz.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/ LOCAL GOVT./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, & P4P: Financing Option

- SJG 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 SJG to confirm project qualifies.

- Questions? Contact:

Peter Druckenmiller
Program Manager
South Jersey Gas
609-572-4271

wdruckenmiller@sjindustries.com

New Jersey's cleanenergy program™

South Jersey Gas

Smart Energy Partners™

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:

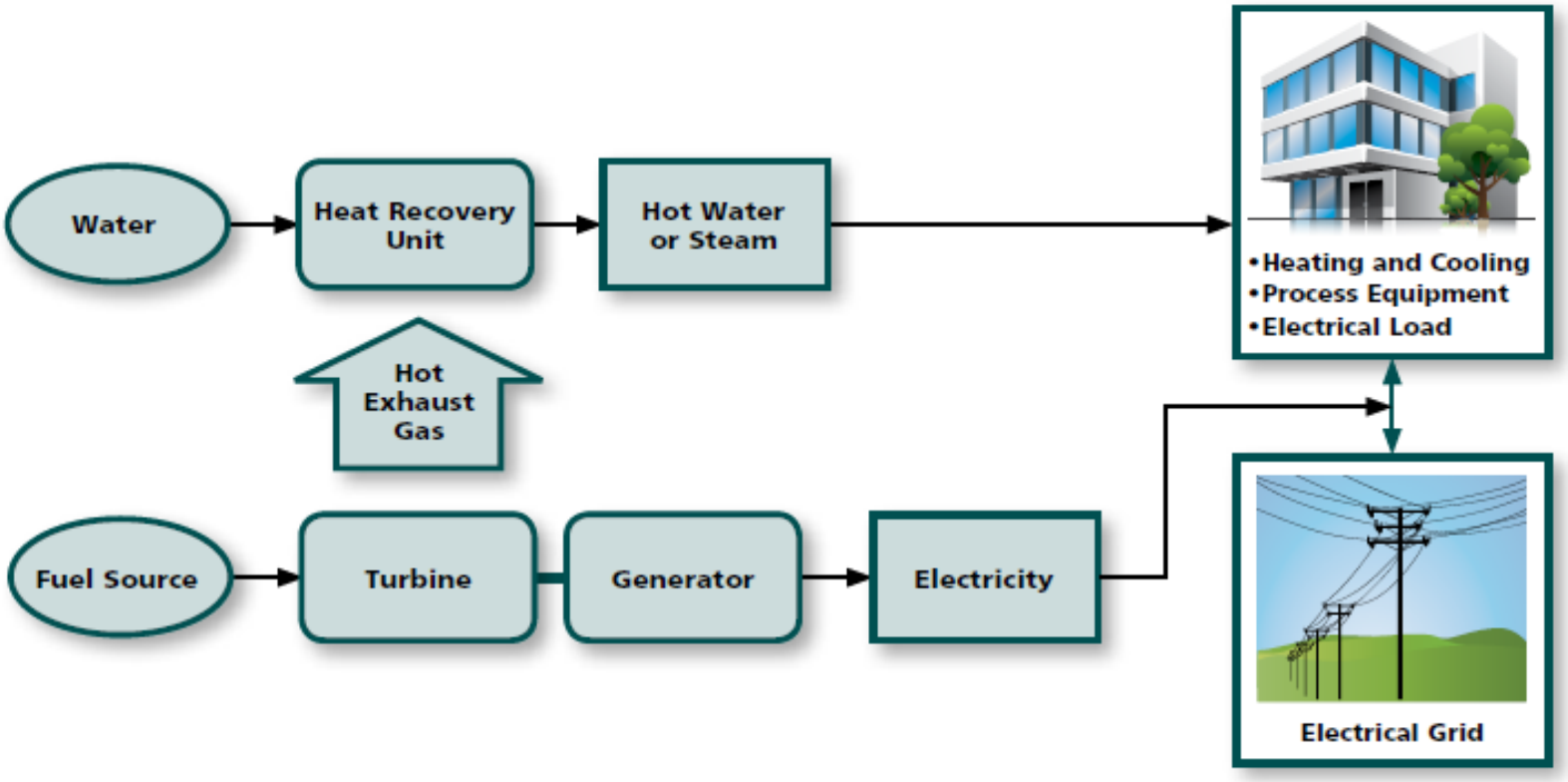
- Fuel Cells (FC) with or without heat recovery (HR)
- Resiliency with Return on Investment
- Technology-neutral incentives

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

COMBINED HEAT & POWER - FUEL CELLS

NJCleanEnergy.com/CHP



COMBINED HEAT & POWER - FUEL CELLS

NJCleanEnergy.com/CHP

Eligible Technology	Size (Installed Rated Capacity)	Incentive ($/Watt) [5]	% of Total Cost Cap per project	$ Cap per project
CHP powered by non-renewable or renewable fuel source, or a combination[4]: • Gas Internal Combustion Engine • Gas Combustion Turbine • Microturbine Fuel Cell with Heat Recovery (FCHR)	≤500 kW[1]	$2.00	30-40%[2]	$2 million
	>500 kW – 1 MW[1]	$1.00		
	>1 MW – 3 MW[1]	$0.55	30%	$3 million
	>3 MW[1]	$0.35		
Fuel Cell without Heat Recovery (FCwoHR)	Same as above[1]	Applicable amount above	30%	$1 million
Waste Heat to Power (WHP)[3] Powered by non-renewable fuel source. Heat recovery or other mechanical recovery from existing equipment utilizing new electric generation equipment (e.g. steam turbine)	≤1 MW[1]	$1.00	30%	$2 million
	>1 MW[1]	$0.50	30%	$3 million

Critical Facility/Blackstart bonus of 25%

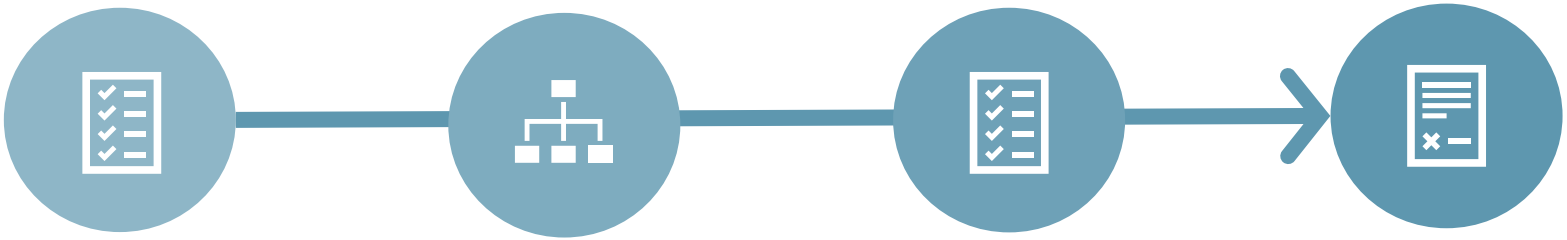
New Jersey's cleanenergy program™

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

Energy Savings Improvement Program (ESIP)

FOR MORE INFORMATION

Michelle Rossi

ESIP Coordinator

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ESIP@bpu.nj.gov

BPU New Jersey's cleanenergy program™

For More Information

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QUESTIONS

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