LGEA Presentation

State of NJ – DEP - Liberty State Park

February 20, 2024

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

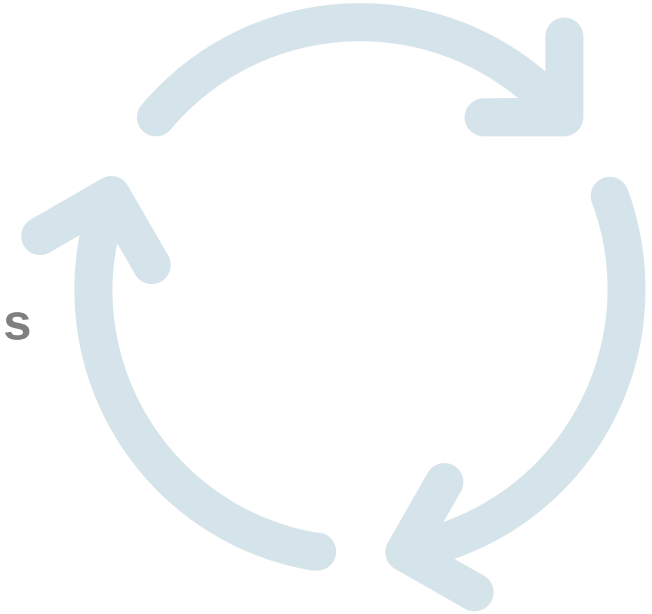
- *DEP – Liberty State Park*
  - Jeffrey MacMullen
  - Charles Shankle
  - Maggie McCann-Johns
  - Laura Petrangeli
  - Stephen Myers
  - Ryan Gergely
- *NJ Clean Energy Program*
  - Sarah Walters – LGEA Project Manager
  - Moussa Traore – LGEA Technical Manager
  - Sayje Essoka-Lasenberry – LGEA Project Auditor
- *BPU*
  - Sara Bluhm Gibson
  - Yulia Grinberg
  - Alisia Quaccoo

AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified & other recommendations
- Energy Savings Improvement Program (ESIP)
- Energy Efficiency Incentive Programs
- Questions regarding the draft audit report
- Next steps for Liberty State Park

LGEA Process

- Application Approval
- Initial Call
- Facility Interviews
- Audit
- Benchmarking & Analysis
- Draft Reports
- LGEA Presentation
- Final Reports



New Jersey's cleanenergy program™

Site Visit & Utility Analysis

Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment

Utility Consumption:

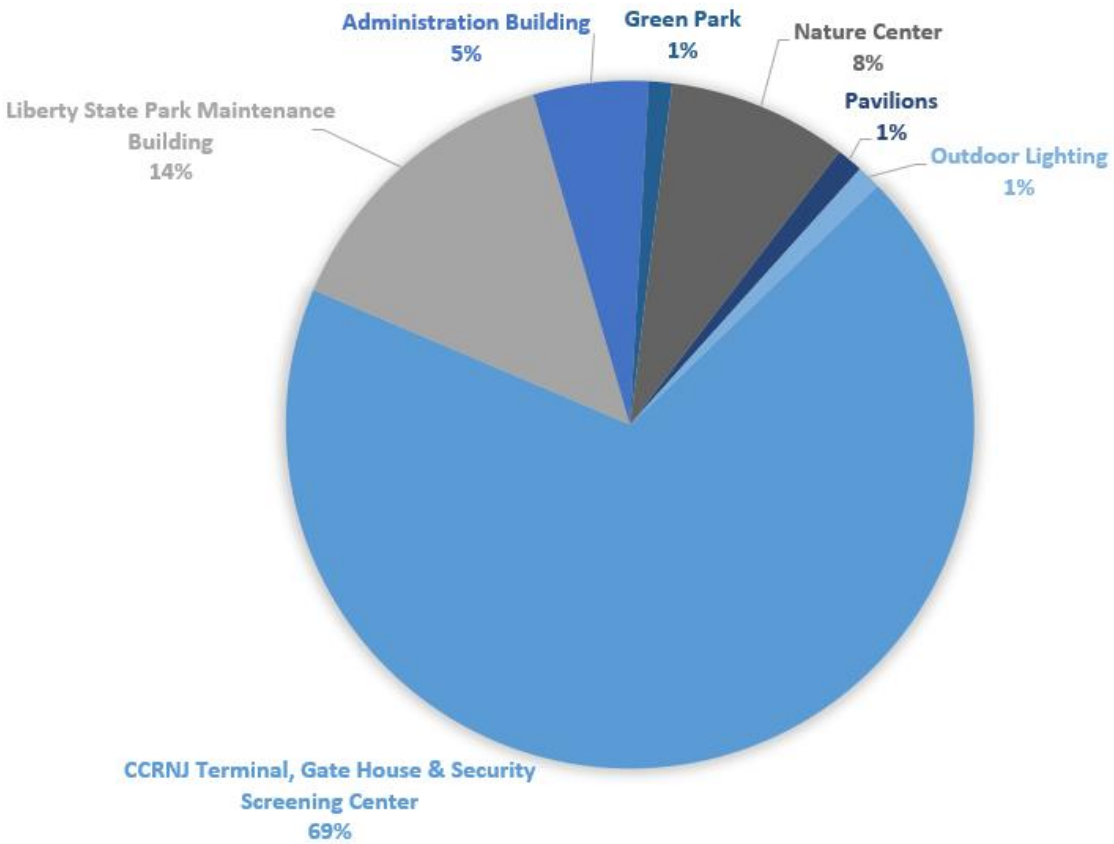
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Water Consumption and Costs

Sites Visited/Analyzed

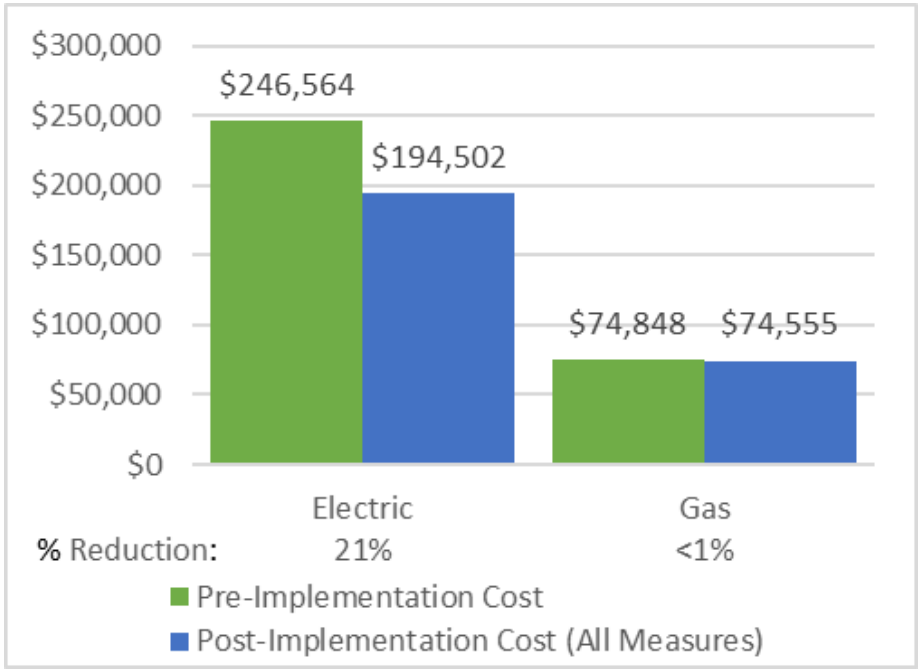
- CCRNJ Terminal & Train Shed
- Gate House/Bathroom/Electric Rm
- Security Screening Center
- Maintenance
- Admin Office
- Freedom Way RR (Green Park)
- Nature Center
- Pavilions
- Outdoor Lighting
  - Wolf Drive
  - 100 Audrey Zapp Dr
  - Freedom Way Park (Millennium Park)

Utility Breakout

Percent of Total Annual Energy Costs

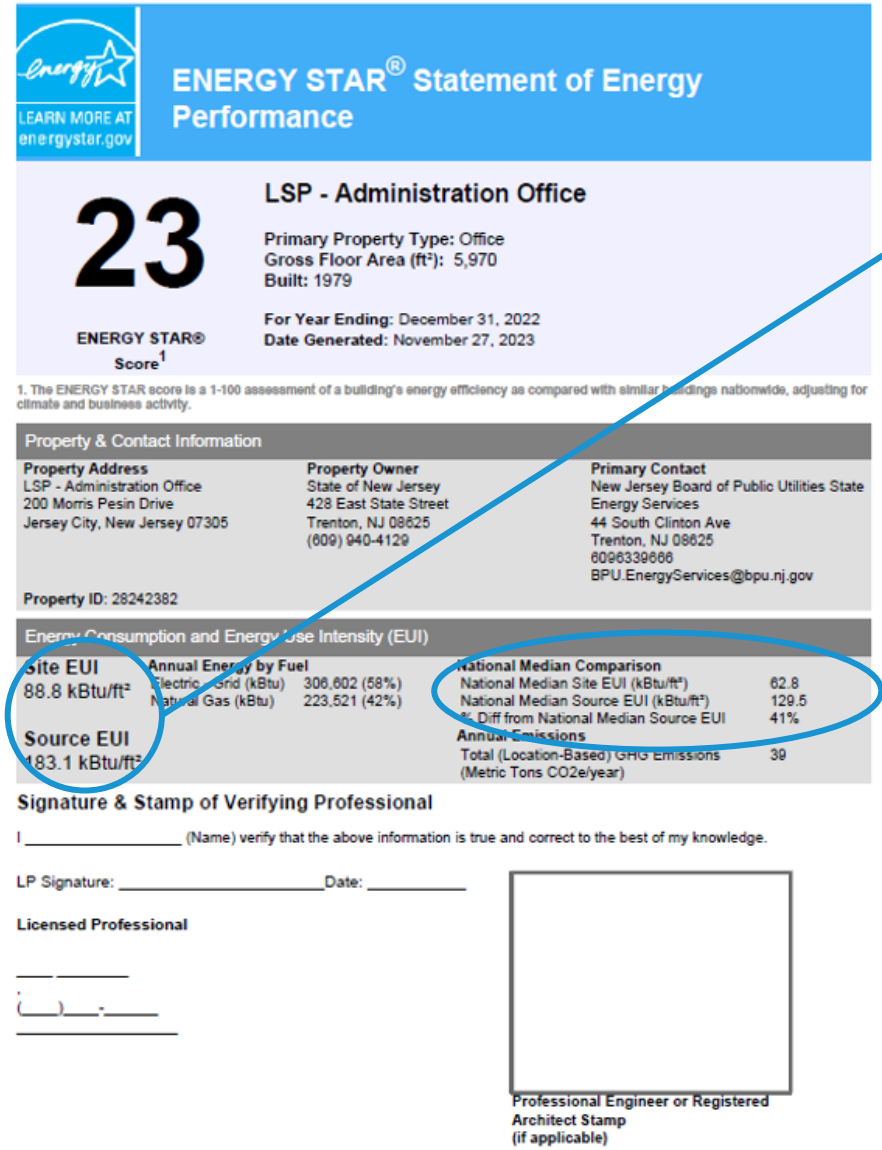


Pre & Post Implementation Cost



New Jersey's cleanenergy program™

BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

23

ENERGY STAR® Score[1]

LSP - Administration Office

Primary Property Type: Office
Gross Floor Area (ft²): 5,970
Built: 1979

For Year Ending: December 31, 2022
Date Generated: November 27, 2023

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
LSP - Administration Office 200 Morris Pesin Drive Jersey City, New Jersey 07305	State of New Jersey 428 East State Street Trenton, NJ 08625 (609) 940-4129	New Jersey Board of Public Utilities State Energy Services 44 South Clinton Ave Trenton, NJ 08625 6096339666 BPU.EnergyServices@bpu.nj.gov

Property ID: 28242382

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
88.8 kBtu/ft²

Source EUI
183.1 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu)	306,602 (58%)	
Natural Gas (kBtu)	223,521 (42%)	

National Median Comparison

National Median Site EUI (kBtu/ft²)	62.8
National Median Source EUI (kBtu/ft²)	129.5
% Diff from National Median Source EUI	41%

Annual Emissions

Total (Location-Based) GHG Emissions (Metric Tons CO2e/year)	39

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
88.8 kBtu/ft²

Source EUI
183.1 kBtu/ft²

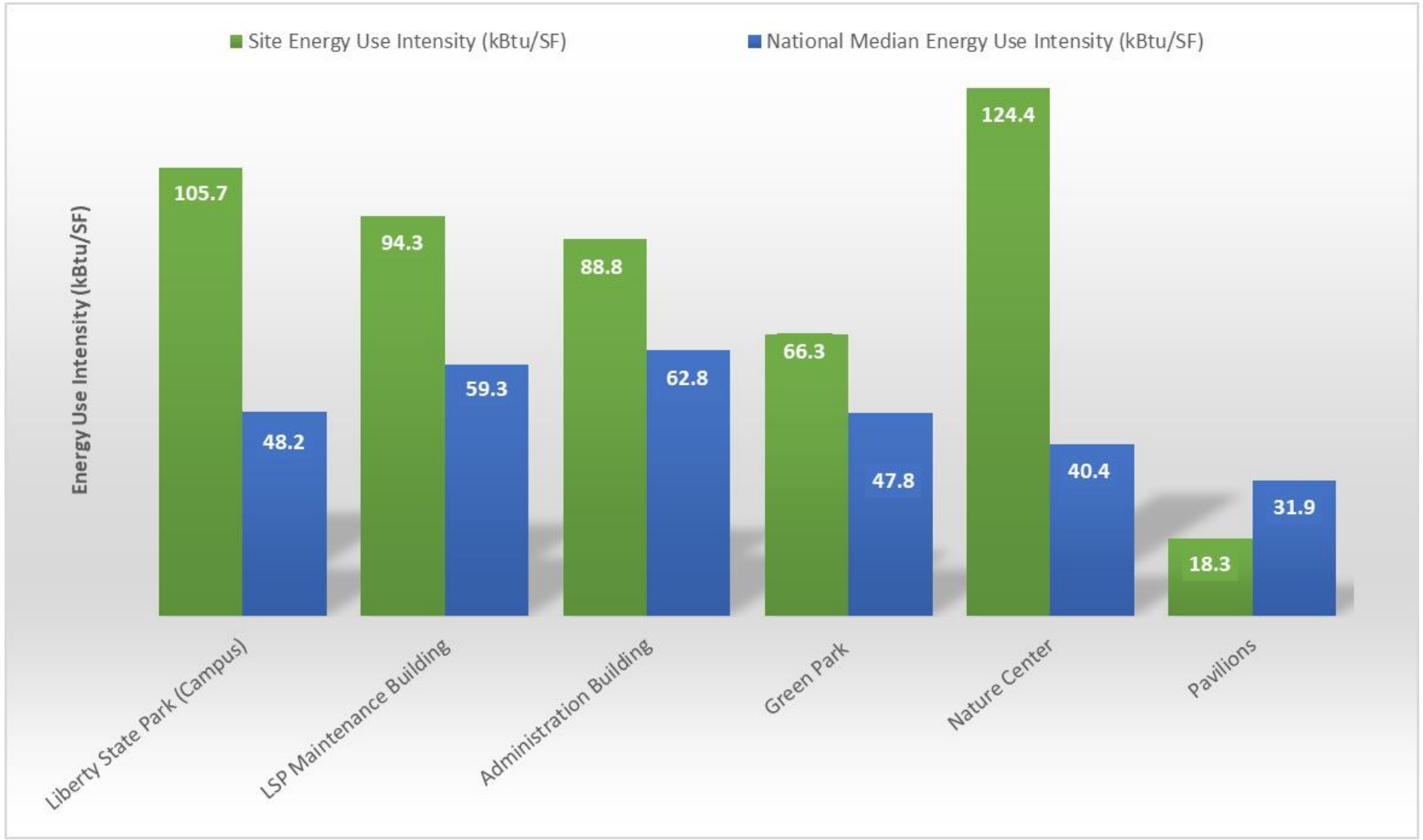
National Median Comparison

National Median Site EUI (kBtu/ft²)	62.8
National Median Source EUI (kBtu/ft²)	129.5
% Diff from National Median Source EUI	41%

Site Name	ENERGY STAR® Score
Admin Office	23
All Other Sites	N/A

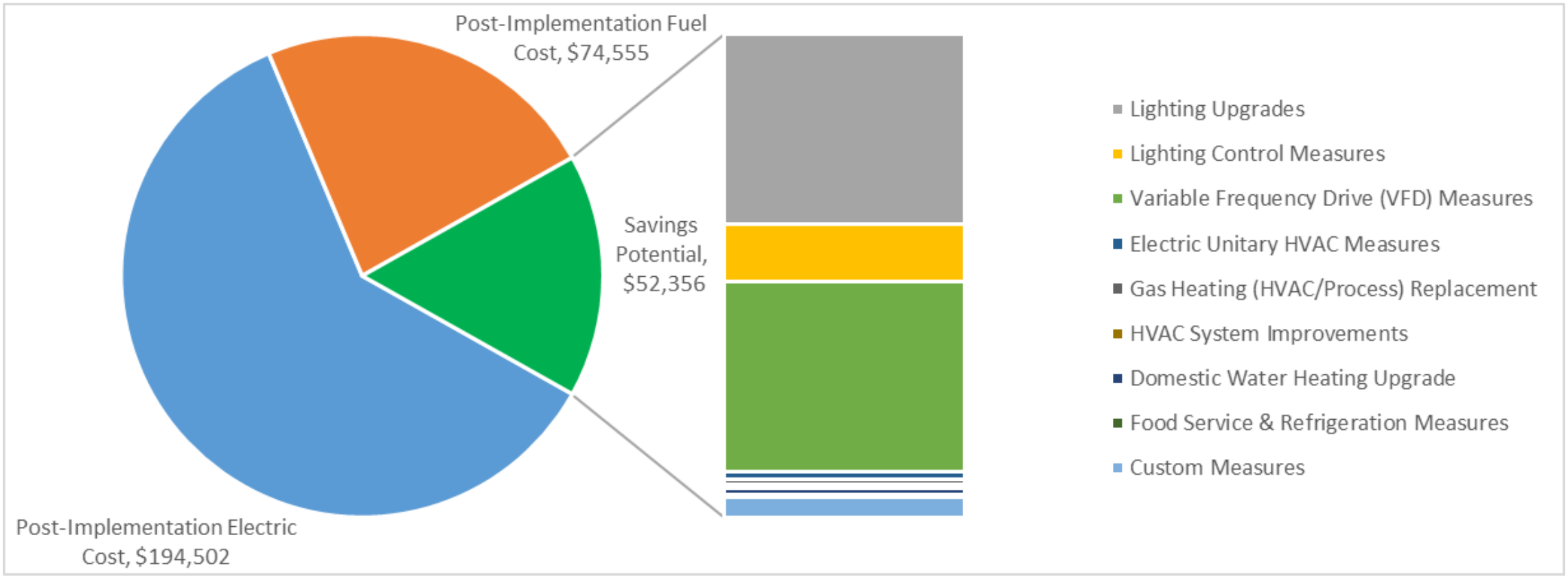
ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

BENCHMARKING



All Opportunities

Savings Potential



ALL OPPORTUNITIES (1 OF 2)

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**130,075**	**20.5**	**-17.8**	**$20,566**	**$79,520**	**$7,770**	**$71,750**	**3.5**	**128,904**
ECM 1	Install LED Fixtures	34,982	2.3	-2.1	$5,582	$36,170	$2,780	$33,390	6.0	34,982
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	5,808	2.1	-1.2	$898	$3,600	$390	$3,210	3.6	5,706
ECM 3	Retrofit Fixtures with LED Lamps	89,284	16.1	-14.4	$14,085	$39,750	$4,600	$35,150	2.5	88,217
Lighting Control Measures		**40,020**	**9.2**	**-8.1**	**$6,252**	**$51,280**	**$10,390**	**$40,890**	**6.5**	**39,353**
ECM 4	Install Occupancy Sensor Lighting Controls	32,870	8.1	-6.6	$5,139	$42,580	$4,890	$37,690	7.3	32,331
ECM 5	Install High/Low Lighting Controls	7,150	1.1	-1.5	$1,113	$8,700	$5,500	$3,200	2.9	7,022
Variable Frequency Drive (VFD) Measures		**130,544**	**34.0**	**0.0**	**$20,627**	**$155,300**	**$11,900**	**$143,400**	**7.0**	**131,457**
ECM 6	Install VFDs on Constant Volume (CV) Fans	114,915	22.2	0.0	$18,171	$125,300	$7,500	$117,800	6.5	115,719
ECM 7	Install VFDs on Process Blowers	15,628	11.9	0.0	$2,456	$30,000	$4,400	$25,600	10.4	15,738
Unitary HVAC Measures		**4,263**	**5.6**	**15.3**	**$858**	**$83,600**	**$3,100**	**$80,500**	**93.8**	**6,089**
ECM 8	Install High Efficiency Air Conditioning Units	2,625	2.8	15.3	$599	$68,400	$2,500	$65,900	110.0	4,440
ECM 9	Install High Efficiency Heat Pumps	1,638	2.9	0.0	$260	$15,200	$600	$14,600	56.3	1,650

ALL OPPORTUNITIES (2 OF 2)

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Gas Heating (HVAC/Process) Replacement		**0**	**0.0**	**34.0**	**$443**	**$11,300**	**$2,000**	**$9,300**	**21.0**	**3,982**
ECM 10	Install High Efficiency Furnaces	0	0.0	34.0	$443	$11,300	$2,000	$9,300	21.0	3,982
HVAC System Improvements		**2,944**	**0.0**	**0.0**	**$465**	**$620**	**$90**	**$530**	**1.1**	**2,964**
ECM 11	Install Pipe Insulation	2,944	0.0	0.0	$465	$620	$90	$530	1.1	2,964
Domestic Water Heating Upgrade		**4,180**	**0.0**	**0.7**	**$676**	**$330**	**$150**	**$180**	**0.3**	**4,295**
ECM 12	Install Low-Flow DHW Devices	4,180	0.0	0.7	$676	$330	$150	$180	0.3	4,295
Food Service & Refrigeration Measures		**1,954**	**0.2**	**0.0**	**$307**	**$540**	**$50**	**$490**	**1.6**	**1,968**
ECM 13	Vending Machine Control	1,954	0.2	0.0	$307	$540	$50	$490	1.6	1,968
Custom Measures		**13,544**	**0.0**	**0.0**	**$2,160**	**$15,700**	**$0**	**$15,700**	**7.3**	**13,639**
ECM 14	Replace Electric Water Heater with Heat Pump Water Heater	13,544	0.0	0.0	$2,160	$15,700	$0	$15,700	7.3	13,639
TOTALS (ALL MEASURES)		**327,524**	**69.5**	**24.2**	**$52,356**	**$398,190**	**$35,450**	**$362,740**	**6.9**	**332,652**

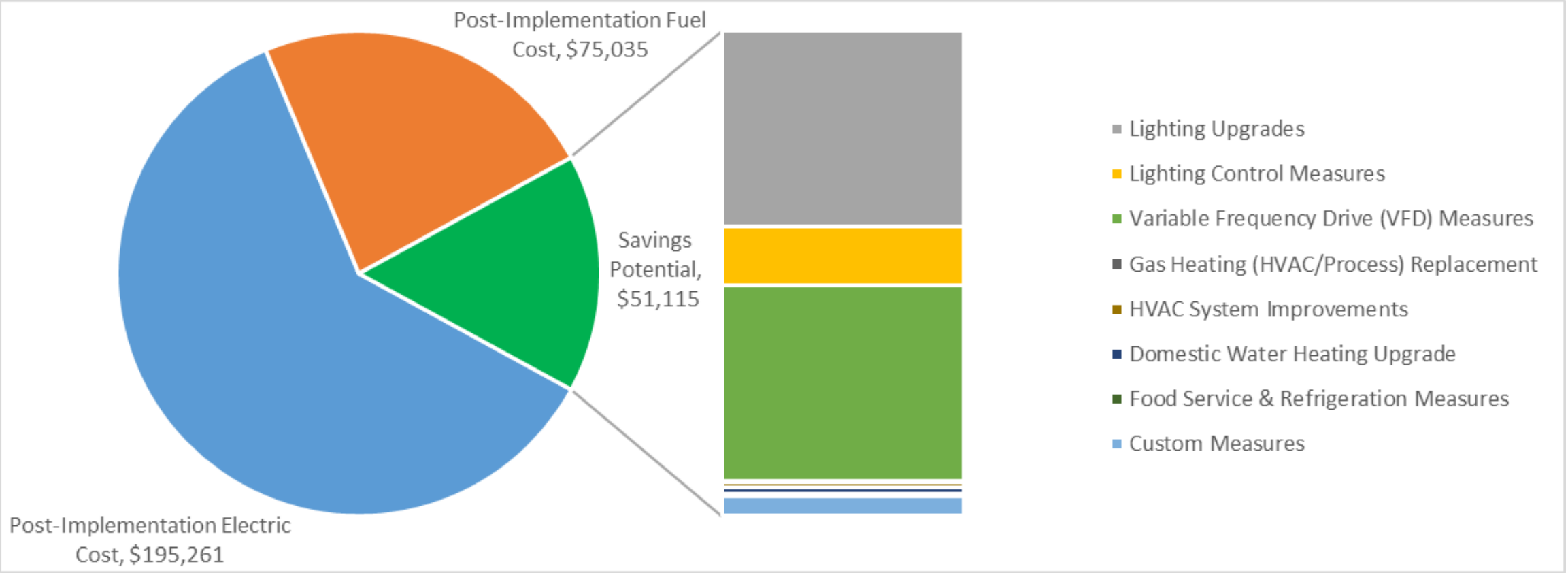
* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

BPU New Jersey's cleanenergy program™

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 ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**130,075**	**20.5**	**-17.8**	**$20,566**	**$79,520**	**$7,770**	**$71,750**	**3.5**	**128,904**
ECM 1	Install LED Fixtures	34,982	2.3	-2.1	$5,582	$36,170	$2,780	$33,390	6.0	34,982
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	5,808	2.1	-1.2	$898	$3,600	$390	$3,210	3.6	5,706
ECM 3	Retrofit Fixtures with LED Lamps	89,284	16.1	-14.4	$14,085	$39,750	$4,600	$35,150	2.5	88,217
Lighting Control Measures		**40,020**	**9.2**	**-8.1**	**$6,252**	**$51,280**	**$10,390**	**$40,890**	**6.5**	**39,353**
ECM 4	Install Occupancy Sensor Lighting Controls	32,870	8.1	-6.6	$5,139	$42,580	$4,890	$37,690	7.3	32,331
ECM 5	Install High/Low Lighting Controls	7,150	1.1	-1.5	$1,113	$8,700	$5,500	$3,200	2.9	7,022
Variable Frequency Drive (VFD) Measures		**130,544**	**34.0**	**0.0**	**$20,627**	**$155,300**	**$11,900**	**$143,400**	**7.0**	**131,457**
ECM 6	Install VFDs on Constant Volume (CV) Fans	114,915	22.2	0.0	$18,171	$125,300	$7,500	$117,800	6.5	115,719
ECM 7	Install VFDs on Process Blowers	15,628	11.9	0.0	$2,456	$30,000	$4,400	$25,600	10.4	15,738
Gas Heating (HVAC/Process) Replacement		**0**	**0.0**	**9.6**	**$150**	**$2,900**	**$500**	**$2,400**	**16.0**	**1,129**
ECM 10	Install High Efficiency Furnaces	0	0.0	9.6	$150	$2,900	$500	$2,400	16.0	1,129
HVAC System Improvements		**2,944**	**0.0**	**0.0**	**$465**	**$620**	**$90**	**$530**	**1.1**	**2,964**
ECM 11	Install Pipe Insulation	2,944	0.0	0.0	$465	$620	$90	$530	1.1	2,964
Domestic Water Heating Upgrade		**4,180**	**0.0**	**0.7**	**$676**	**$330**	**$150**	**$180**	**0.3**	**4,295**
ECM 12	Install Low-Flow DHW Devices	4,180	0.0	0.7	$676	$330	$150	$180	0.3	4,295
Food Service & Refrigeration Measures		**1,954**	**0.2**	**0.0**	**$307**	**$540**	**$50**	**$490**	**1.6**	**1,968**
ECM 13	Vending Machine Control	1,954	0.2	0.0	$307	$540	$50	$490	1.6	1,968
Custom Measures		**13,059**	**0.0**	**0.0**	**$2,071**	**$13,200**	**$0**	**$13,200**	**6.4**	**13,150**
ECM 14	Replace Electric Water Heater with Heat Pump Water Heater	13,059	0.0	0.0	$2,071	$13,200	$0	$13,200	6.4	13,150
TOTALS		**322,776**	**63.9**	**-15.5**	**$51,115**	**$303,690**	**$30,850**	**$272,840**	**5.3**	**323,221**

* - All incentives presented in this table are included as placesholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

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

CCRNJ Terminal, Gate House & Security Screening Center

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**71,030**	**15.0**	**-15**	**$11,072**	**$39,580**	**$4,290**	**$35,290**	**3.2**	**69,782**
ECM 1	Install LED Fixtures	Yes	9,986	2.3	-2	$1,557	$12,720	$1,000	$11,720	7.5	9,811
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,848	0.4	0	$288	$780	$90	$690	2.4	1,814
ECM 3	Retrofit Fixtures with LED Lamps	Yes	59,197	12.2	-12	$9,227	$26,080	$3,200	$22,880	2.5	58,157
Lighting Control Measures			**21,417**	**4.6**	**-5**	**$3,338**	**$25,570**	**$5,960**	**$19,610**	**5.9**	**21,032**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	15,816	3.9	-3	$2,465	$19,960	$2,360	$17,600	7.1	15,532
ECM 5	Install High/Low Lighting Controls	Yes	5,601	0.7	-1	$873	$5,610	$3,600	$2,010	2.3	5,501
Variable Frequency Drive (VFD) Measures			**76,664**	**10.7**	**0**	**$12,144**	**$63,900**	**$3,500**	**$60,400**	**5.0**	**77,200**
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	76,664	10.7	0	$12,144	$63,900	$3,500	$60,400	5.0	77,200
Unitary HVAC Measures			**1,638**	**2.9**	**0**	**$260**	**$15,200**	**$600**	**$14,600**	**56.3**	**1,650**
ECM 7	Install High Efficiency Heat Pumps	No	1,638	2.9	0	$260	$15,200	$600	$14,600	56.3	1,650
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**24**	**$293**	**$8,400**	**$1,500**	**$6,900**	**23.6**	**2,853**
ECM 8	Install High Efficiency Furnaces	No	0	0.0	24	$293	$8,400	$1,500	$6,900	23.6	2,853
HVAC System Improvements			**2,152**	**0.0**	**0**	**$341**	**$350**	**$50**	**$300**	**0.9**	**2,167**
ECM 9	Install Pipe Insulation	Yes	2,152	0.0	0	$341	$350	$50	$300	0.9	2,167
Domestic Water Heating Upgrade			**1,807**	**0.0**	**0**	**$286**	**$140**	**$60**	**$80**	**0.3**	**1,820**
ECM 10	Install Low-Flow DHW Devices***	Yes	1,807	0.0	0	$286	$140	$60	$80	0.3	1,820
Custom Measures			**3,693**	**0.0**	**0**	**$585**	**$2,900**	**$0**	**$2,900**	**5.0**	**3,719**
ECM 11	Replace Electric Water Heater with Heat Pump Water Heater	Yes	3,693	0.0	0	$585	$2,900	$0	$2,900	5.0	3,719
TOTALS (COST EFFECTIVE MEASURES)			**176,763**	**30.2**	**-19**	**$27,765**	**$132,440**	**$13,860**	**$118,580**	**4.3**	**175,720**
TOTALS (ALL MEASURES)			**178,402**	**33.1**	**5**	**$28,318**	**$156,040**	**$15,960**	**$140,080**	**4.9**	**180,223**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

MAINTENANCE BUILDING

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**9,584**	**1.6**	**-1**	**$1,494**	**$6,520**	**$770**	**$5,750**	**3.8**	**9,532**
ECM 1	Install LED Fixtures	Yes	4,235	0.0	0	$666	$4,010	$350	$3,660	5.5	4,265
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	597	0.2	0	$92	$400	$50	$350	3.8	586
ECM 3	Retrofit Fixtures with LED Lamps	Yes	4,752	1.4	-1	$736	$2,110	$370	$1,740	2.4	4,681
Lighting Control Measures			**4,938**	**1.5**	**-1**	**$763**	**$6,850**	**$1,100**	**$5,750**	**7.5**	**4,850**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	4,096	1.3	-1	$633	$6,000	$610	$5,390	8.5	4,022
ECM 5	Install High/Low Lighting Controls	Yes	842	0.2	0	$130	$850	$490	$360	2.8	827
Variable Frequency Drive (VFD) Measures			**46,134**	**21.8**	**0**	**$7,250**	**$81,400**	**$8,200**	**$73,200**	**10.1**	**46,457**
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	30,505	9.9	0	$4,794	$51,400	$3,800	$47,600	9.9	30,719
ECM 7	Install VFDs on Process Blowers	Yes	15,628	11.9	0	$2,456	$30,000	$4,400	$25,600	10.4	15,738
Unitary HVAC Measures			**637**	**0.9**	**10**	**$219**	**$36,000**	**$1,400**	**$34,600**	**158.2**	**1,798**
ECM 8	Install High Efficiency Air Conditioning Units	No	637	0.9	10	$219	$36,000	$1,400	$34,600	158.2	1,798
HVAC System Improvements			**791**	**0.0**	**0**	**$124**	**$270**	**$40**	**$230**	**1.8**	**797**
ECM 9	Install Pipe Insulation	Yes	791	0.0	0	$124	$270	$40	$230	1.8	797
Domestic Water Heating Upgrade			**916**	**0.0**	**0**	**$144**	**$60**	**$20**	**$40**	**0.3**	**922**
ECM 10	Install Low-Flow DHW Devices	Yes	916	0.0	0	$144	$60	$20	$40	0.3	922
Food Service & Refrigeration Measures			**1,954**	**0.2**	**0**	**$307**	**$540**	**$50**	**$490**	**1.6**	**1,968**
ECM 11	Vending Machine Control	Yes	1,954	0.2	0	$307	$540	$50	$490	1.6	1,968
Custom Measures			**4,748**	**0.0**	**0**	**$746**	**$3,800**	**$0**	**$3,800**	**5.1**	**4,781**
ECM 12	Replace Electric Water Heater with Heat Pump Water Heater	Yes	4,748	0.0	0	$746	$3,800	$0	$3,800	5.1	4,781
TOTALS (COST EFFECTIVE MEASURES)			**69,066**	**25.1**	**-2**	**$10,829**	**$99,440**	**$10,180**	**$89,260**	**8.2**	**69,306**
TOTALS (ALL MEASURES)			**69,703**	**26.0**	**8**	**$11,048**	**$135,440**	**$11,580**	**$123,860**	**11.2**	**71,104**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

ADMINISTRATION BUILDING

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**24,844**	**3.7**	**-2**	**$3,870**	**$18,100**	**$1,580**	**$16,520**	**4.3**	**24,810**
ECM 1	Install LED Fixtures	Yes	12,256	0.0	0	$1,920	$7,180	$330	$6,850	3.6	12,342
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	3,364	1.4	-1	$518	$2,420	$250	$2,170	4.2	3,305
ECM 3	Retrofit Fixtures with LED Lamps	Yes	9,223	2.3	-1	$1,432	$8,500	$1,000	$7,500	5.2	9,163
Lighting Control Measures			**2,525**	**1.1**	**-1**	**$389**	**$7,090**	**$990**	**$6,100**	**15.7**	**2,481**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	2,372	1.0	0	$365	$6,810	$780	$6,030	16.5	2,331
ECM 5	Install High/Low Lighting Controls	Yes	153	0.1	0	$24	$280	$210	$70	3.0	150
Unitary HVAC Measures			**1,988**	**1.9**	**5**	**$380**	**$32,400**	**$1,100**	**$31,300**	**82.3**	**2,641**
ECM 6	Install High Efficiency Air Conditioning Units	No	1,988	1.9	5	$380	$32,400	$1,100	$31,300	82.3	2,641
Domestic Water Heating Upgrade			**556**	**0.0**	**0**	**$87**	**$30**	**$20**	**$10**	**0.1**	**560**
ECM 7	Install Low-Flow DHW Devices	Yes	556	0.0	0	$87	$30	$20	$10	0.1	560
Custom Measures			**2,110**	**0.0**	**0**	**$331**	**$4,000**	**$0**	**$4,000**	**12.1**	**2,125**
ECM 8	Replace Electric Water Heater with Heat Pump Water Heater	Yes	2,110	0.0	0	$331	$4,000	$0	$4,000	12.1	2,125
TOTALS (COST EFFECTIVE MEASURES)			**30,034**	**4.8**	**-2**	**$4,677**	**$29,220**	**$2,590**	**$26,630**	**5.7**	**29,976**
TOTALS (ALL MEASURES)			**32,022**	**6.7**	**3**	**$5,058**	**$61,620**	**$3,690**	**$57,930**	**11.5**	**32,617**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

OUTDOOR LIGHTING

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**15,466**	**0.0**	**0**	**$2,586**	**$2,710**	**$0**	**$2,710**	**1.0**	**15,574**
ECM 1	Retrofit Fixtures with LED Lamps	Yes	15,466	0.0	0	$2,586	$2,710	$0	$2,710	1.0	15,574
TOTALS (COST EFFECTIVE MEASURES)			**15,466**	**0.0**	**0**	**$2,586**	**$2,710**	**$0**	**$2,710**	**1.0**	**15,574**
TOTALS (ALL MEASURES)			**15,466**	**0.0**	**0**	**$2,586**	**$2,710**	**$0**	**$2,710**	**1.0**	**15,574**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

FREEDOM WAY RESTROOM (GREEN PARK)

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**2,593**	**0.0**	**0**	**$476**	**$6,070**	**$400**	**$5,670**	**11.9**	**2,611**
ECM 1	Install LED Fixtures	Yes	2,593	0.0	0	$476	$6,070	$400	$5,670	11.9	2,611
Lighting Control Measures			**263**	**0.0**	**0**	**$47**	**$660**	**$80**	**$580**	**12.3**	**257**
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	263	0.0	0	$47	$660	$80	$580	12.3	257
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**10**	**$150**	**$2,900**	**$500**	**$2,400**	**16.0**	**1,129**
ECM 3	Install High Efficiency Furnaces	Yes	0	0.0	10	$150	$2,900	$500	$2,400	16.0	1,129
Domestic Water Heating Upgrade			**157**	**0.0**	**0**	**$29**	**$20**	**$10**	**$10**	**0.3**	**158**
ECM 4	Install Low-Flow DHW Devices	Yes	157	0.0	0	$29	$20	$10	$10	0.3	158
Custom Measures			**485**	**0.0**	**0**	**$89**	**$2,500**	**$0**	**$2,500**	**28.1**	**488**
ECM 5	Replace Electric Water Heater with Heat Pump Water Heater	No	485	0.0	0	$89	$2,500	$0	$2,500	28.1	488
TOTALS (COST EFFECTIVE MEASURES)			**3,012**	**0.0**	**10**	**$703**	**$9,650**	**$990**	**$8,660**	**12.3**	**4,156**
TOTALS (ALL MEASURES)			**3,497**	**0.0**	**10**	**$792**	**$12,150**	**$990**	**$11,160**	**14.1**	**4,644**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

BPU New Jersey's cleanenergy program™

NATURE CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**331**	**0.1**	**0**	**$52**	**$200**	**$0**	**$200**	**3.9**	**325**
ECM 1	Retrofit Fixtures with LED Lamps	Yes	331	0.1	0	$52	$200	$0	$200	3.9	325
Lighting Control Measures			**9,044**	**1.9**	**-2**	**$1,416**	**$10,450**	**$2,180**	**$8,270**	**5.8**	**8,885**
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	8,490	1.8	-2	$1,329	$8,490	$980	$7,510	5.6	8,341
ECM 3	Install High/Low Lighting Controls	Yes	554	0.1	0	$87	$1,960	$1,200	$760	8.8	544
Variable Frequency Drive (VFD) Measures			**7,746**	**1.6**	**0**	**$1,233**	**$10,000**	**$200**	**$9,800**	**7.9**	**7,800**
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	7,746	1.6	0	$1,233	$10,000	$200	$9,800	7.9	7,800
Domestic Water Heating Upgrade			**0**	**0.0**	**1**	**$9**	**$20**	**$10**	**$10**	**1.1**	**85**
ECM 5	Install Low-Flow DHW Devices	Yes	0	0.0	1	$9	$20	$10	$10	1.1	85
TOTALS (COST EFFECTIVE MEASURES)			**17,121**	**3.6**	**-1**	**$2,710**	**$20,670**	**$2,390**	**$18,280**	**6.7**	**17,096**
TOTALS (ALL MEASURES)			**17,121**	**3.6**	**-1**	**$2,710**	**$20,670**	**$2,390**	**$18,280**	**6.7**	**17,096**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

PAVILIONS

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades			**6,227**	**0.1**	**0**	**$1,015**	**$6,340**	**$730**	**$5,610**	**5.5**	**6,271**
ECM 1	Install LED Fixtures	Yes	5,911	0.0	0	$963	$6,190	$700	$5,490	5.7	5,953
ECM 2	Retrofit Fixtures with LED Lamps	Yes	316	0.1	0	$51	$150	$30	$120	2.3	318
Lighting Control Measures			**1,835**	**0.0**	**0**	**$299**	**$660**	**$80**	**$580**	**1.9**	**1,847**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,835	0.0	0	$299	$660	$80	$580	1.9	1,847
Domestic Water Heating Upgrade			**744**	**0.0**	**0**	**$121**	**$60**	**$30**	**$30**	**0.2**	**749**
ECM 4	Install Low-Flow DHW Devices	Yes	744	0.0	0	$121	$60	$30	$30	0.2	749
Custom Measures			**2,508**	**0.0**	**0**	**$409**	**$2,500**	**$0**	**$2,500**	**6.1**	**2,526**
ECM 5	Replace Electric Water Heater with Heat Pump Water Heater	Yes	2,508	0.0	0	$409	$2,500	$0	$2,500	6.1	2,526
TOTALS (COST EFFECTIVE MEASURES)			**11,314**	**0.1**	**0**	**$1,844**	**$9,560**	**$840**	**$8,720**	**4.7**	**11,393**
TOTALS (ALL MEASURES)			**11,314**	**0.1**	**0**	**$1,844**	**$9,560**	**$840**	**$8,720**	**4.7**	**11,393**

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

Energy Efficient Best Practices

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

See individual reports for specific EE Best Practices by building

BPU New Jersey's cleanenergy program™

WATER BEST PRACTICES

- Leak Detection and Repair
- Toilets and Urinals
- Faucets and Showerheads
- Commercial Kitchen Equipment
- Laundry Equipment
- Cooling Towners
- Steam Boiler System
- Pools and Spas
- Laboratory and Medical Equipment
- Water Metering and Submetering
- Vehicle Washing
- Single Pass Cooling System
- Landscaping and Irrigation
- On-Site Alternative Water Sources

See individual reports for specific Water Best Practices by building

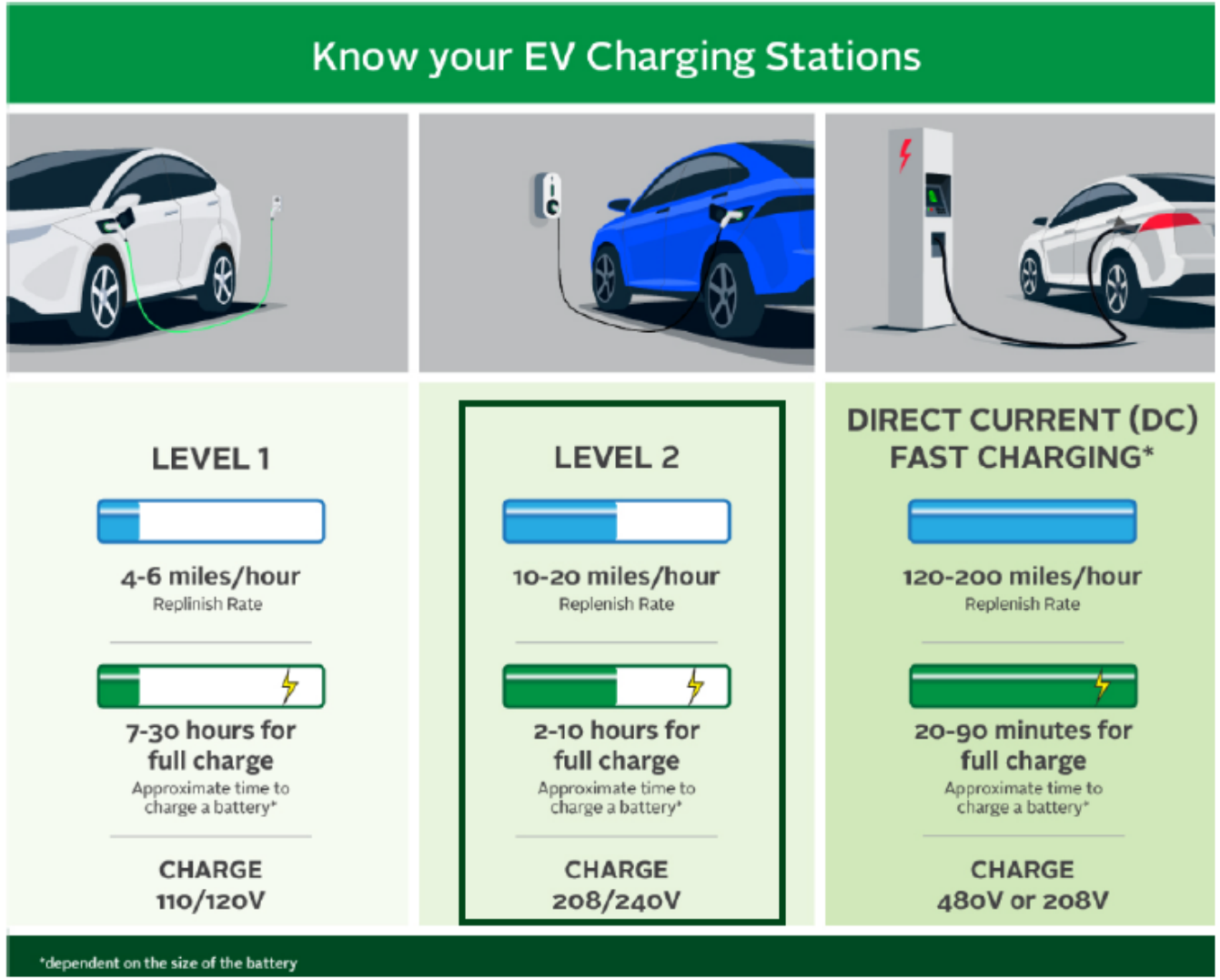
BPU New Jersey's cleanenergy program™

Measures for Future Consideration

- VRF Systems

EV Charging Station Potential

NJCleanEnergy.com/EV



	Liberty State Park
Potential:	**Medium**

Solar Energy Generation Potential

NJCleanEnergy.com/renewable-energy

	CCNJ, Gate House, Security Screening
Potential:	**HIGH**
System Potential: (kW)	160
Electric Generation: (kWh per year)	190,619
Displaced Cost: (per year)	$30,190

FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

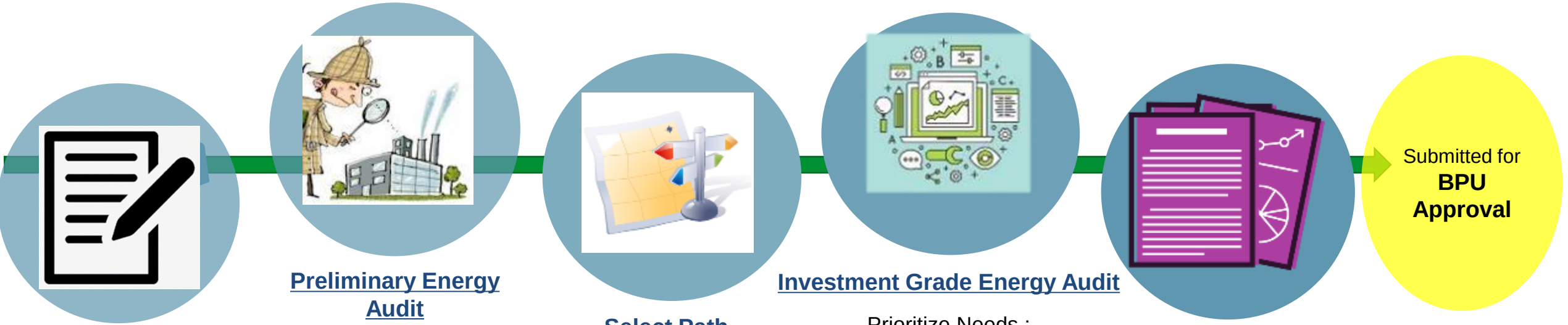
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting = NJ ESIP Program
- A creative tool and financing mechanism that allows public entities to make energy efficiency improvements without impacting their budgets
- Administered by the NJBPU
- Project is paid for with the value of its own energy savings
- 2 Options: Lease Purchase Loan or Bond
- 15 or 20 year pay back term
- NJBPU Approved Incentive Programs
    - Utility or NJCEP
- Can be combined with Federal/State Grants
- No upfront capital expenses
- No referendum or impact to tax payers

New Jersey's cleanenergy program™

Energy Savings Improvement Program

NJCleanEnergy.com/ESIP



ESIP Intake Form

Get informed;
Begin the process

Preliminary Energy Audit

Free LGEA
or
other ASHRAE Level II Audit

Select Path

ESCO, Hybrid or DIY Model;
Local Public Contract Law
Public School Contract Law
Compliance

Investment Grade Energy Audit

Prioritize Needs ;
Select Project's ECM's

Energy Savings Plan

Must be Cash Flow Positive;
Purchase Savings Guarantee?
Third Party Verification

Submitted for **BPU Approval**

New Jersey's cleanenergy program™

Energy Savings Improvement Program

NJCleanEnergy.com/ESIP

FOR MORE INFORMATION

Michelle Rossi

ESIP Coordinator

ESIP@bpu.nj.gov

o: 609.913.6295

c: 609.915.0903

State Facilities Initiative (SFI)

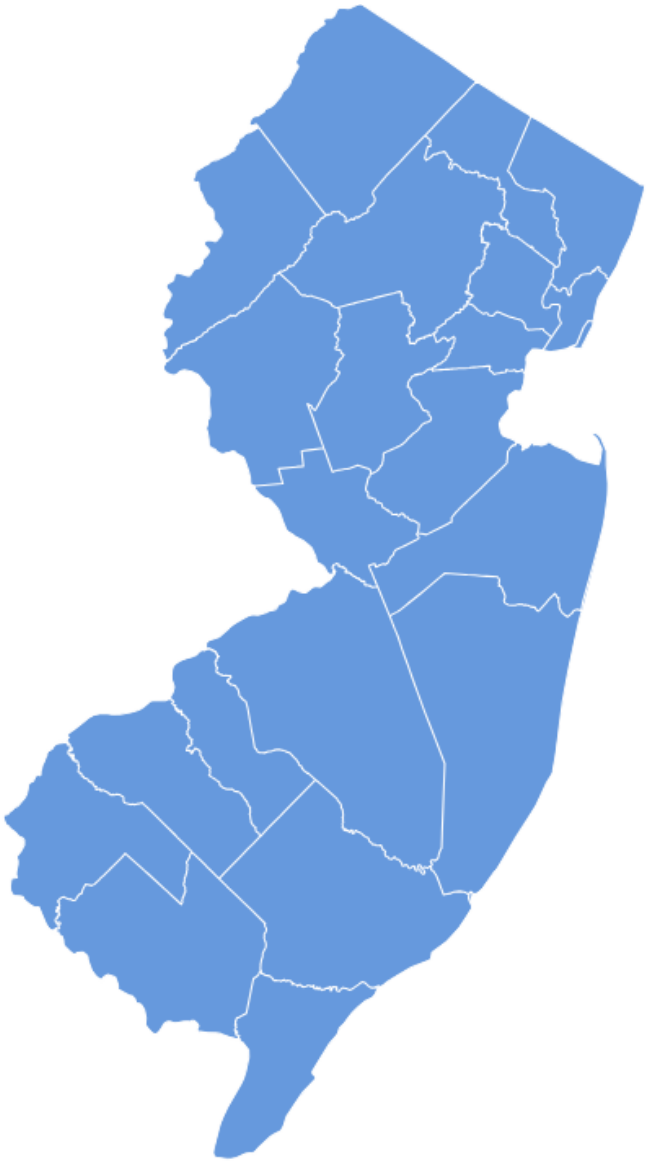
The State Facilities Initiative (SFI)

This program is for State-owned facilities.

The program identifies and implements Energy Efficiency projects in State-owned facilities or State-sponsored projects with the objective of producing energy and cost savings. The funding provided to the SFI is directly in line with EMP Goals 3.3.5 and 4.1.1.

EMP Goal 3.3.5 seeks to "[i]mprove energy efficiency in, and retrofit state buildings to, a high performance standard."

EMP Goal 4.1.1 addresses electrifying State facilities.



C&I Energy Efficiency Programs

NJCleanEnergy.com

LOCAL GOVERNMENT CUSTOMERS

COMMERCIAL & INSTITUTIONAL CUSTOMERS

LARGE ENERGY CUSTOMERS

EXISTING BUILDINGS

MEASUREMENT & AUDITS

FREE Energy Audits

RETROFITS

Prescriptive & Custom Rebates

Direct Install

Engineered Solutions

And more from your local utility!

Incentives up to $4 million for eligible projects

NEW CONSTRUCTION

Prescriptive & Custom Rebates for New Construction and Gut Rehabs

Pay for Performance incentives for buildings over 50,000 sq. ft.

DISTRIBUTED ENERGY RESOURCES

Combined Heat & Power and Fuel Cell Installation Incentives

Microgrid Development

Battery Storage

Muni EV Fleets

Key:

Programs run by investor-owned utility companies

Programs run by NJCEP

UTILITY RUN ENERGY EFFICIENCY PROGRAMS*

NJCleanEnergy.com/Transition

PRESCRIPTIVE & CUSTOM REBATES:

- Individual high efficiency equipment rebates for renovation, remodeling, and equipment replacement
- Flexibility to do a little or a lot
- No size requirement

DIRECT INSTALL:

- Turn-key retrofit program to replace outdated and inefficient equipment including, lighting, HVAC, refrigeration, etc.
- The facility must have an average electric peak demand <200kW in the previous year to qualify

ENERGY MANAGEMENT :

- Includes the Building Tune-up (BT), Retro-commissioning (RCx), and Strategic Energy Management (SEM) subprograms. These subprograms offer a comprehensive mix of custom energy-savings measures such as basic HVAC tune-ups, building systems tune-ups, controls' calibration, diagnostic testing, and installation of measures to enhance your building's energy performance and savings.

ENGINEERED SOLUTIONS:

- Comprehensive, whole-building approach to saving energy
- The facility must have an average electric peak demand >200kW in the previous year to qualify

Other programs may be available to you. Check with your Utility Provider to see a full list of offering and what you may be qualified for.

Utility Run Energy Efficiency Programs

PSE&G

Dave Kirsch – David.Kirsch@pseg.com
Steve Barba – Steven.T.Barba@pseg.com

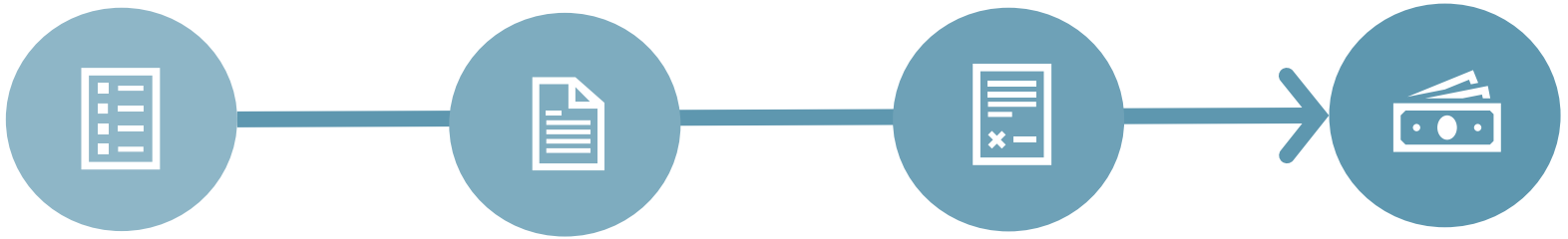
Large Energy Users

NJCleanEnergy.com/LEUP

WHO	Large C&I entities who have paid a minimum of $5,000,000 in the previous 12 months of utility bills
SIZE TO QUALIFY	The average peak demand of all facilities submitted ≥400kW and/or 4,000 DTh
ABOUT	• Encourages large C&I utility customers to self-invest in energy efficiency, combined heat & power, and fuel cell projects • Must have ability to "bank" funds for up to two fiscal years
INCENTIVE CAP	Maximum incentive per entity is the lesser of: • $4 million, • 75% of total project cost, or • 90% of NJCEP contribution or annual energy saving caps ($0.33/kWh and $3.75/therm)

Large Energy Users

NJCleanEnergy.com/LEUP



Program Enrollment

Submission and Approval of Application

Submission of Draft Energy Efficiency Plan

Reservation of Incentives (optional)

Submission of Final Energy Efficiency Plan

Commitment of Incentives

Confirmation of Installation

Incentives Paid

For More Information

Sarah Walters – LGEA Project Manager
SWalters@trccompanies.com
(732) 589-7372

Moussa Traore – LGEA Technical Manager
MTraore@trccompanies.com
(732) 902-1797

Sayje Essoka-Lasenberry – LGEA Energy Auditor
SEssoka-Lasenberry@trccompanies.com
(862) 308-3185

THANK YOU