

LGEA Presentation Bridgeton State Office

December 15, 2023



New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

- *Bridgeton State Office*
 - Christopher Longwith – Health & Safety Officer
 - Anthony Fleming – Building Manager
 - Gary Karr – Assistant Commissioner
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Juno Romanick – LGEA Project Auditor
 - Amanda Muench – LGEA Account Manager
 - Sara Bluhm – BPU
 - Yulia Grinberg - BPU
- *Utility Energy Efficiency Programs*
 - Kimberly Byk – SJG
 - Nicholas Jackson – ACE

AGENDA

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

LGEA PROCESS

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



BRIDGETON STATE OFFICE

Overview of Systems, Baseline & Existing Conditions:

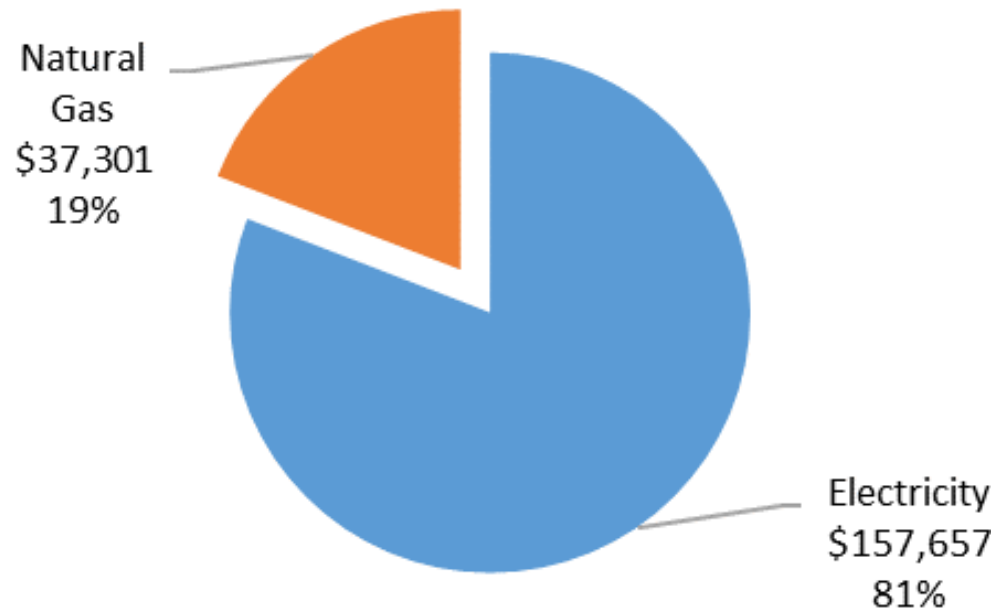
- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment

Utility Consumption:

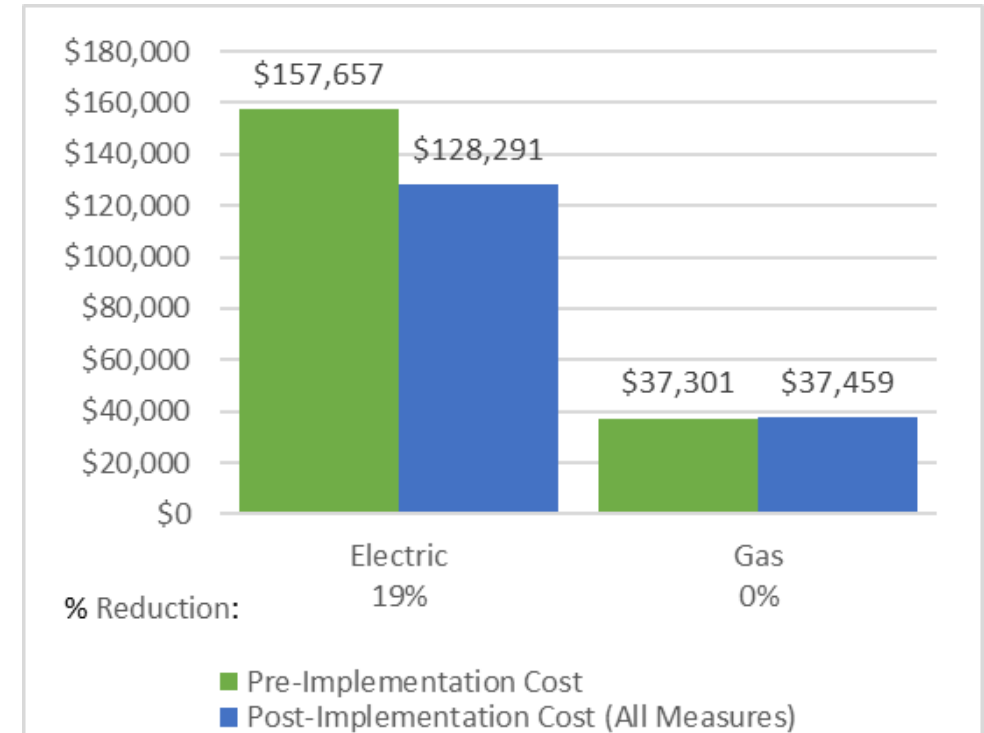
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Water Consumption and Costs

UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

 **ENERGY STAR® Statement of Energy Performance**
LEARN MORE AT energystar.gov

63
ENERGY STAR® Score¹

DOL - Bridgeton State Office Building

Primary Property Type: Office
Gross Floor Area (ft²): 55,000
Built: 1992

For Year Ending: February 28, 2023
Date Generated: August 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 DOL - Bridgeton State Office Building 40 East Broad Street Bridgeton, New Jersey 08302	Property Owner State of New Jersey 428 East State Street Trenton, NJ 08625 (609) 940-4129	Primary Contact New Jersey Board of Public Utilities State Energy Services 44 South Clinton Ave Trenton, NJ 08625 6096339666 BPU.EnergyServices@bpu.nj.gov
---	--	--

Property ID: 27843909

Energy Consumption and Energy Use Intensity (EUI)

Site EUI 94.2 kBtu/ft²	Source EUI 193.9 kBtu/ft²	Annual Energy by Fuel Electric - Grid (kBtu) 2,983,856 (53%) Natural Gas (kBtu) 2,199,827 (42%)	National Median Comparison National Median Site EUI (kBtu/ft²) 112.1 National Median Source EUI (kBtu/ft²) 230.7 % Diff from National Median Source EUI -16%
----------------------------------	-------------------------------------	--	--

Annual Emissions
Total (Location-Based) GHG Emissions (Metric Tons CO2e/year) 385

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
94.2 kBtu/ft²

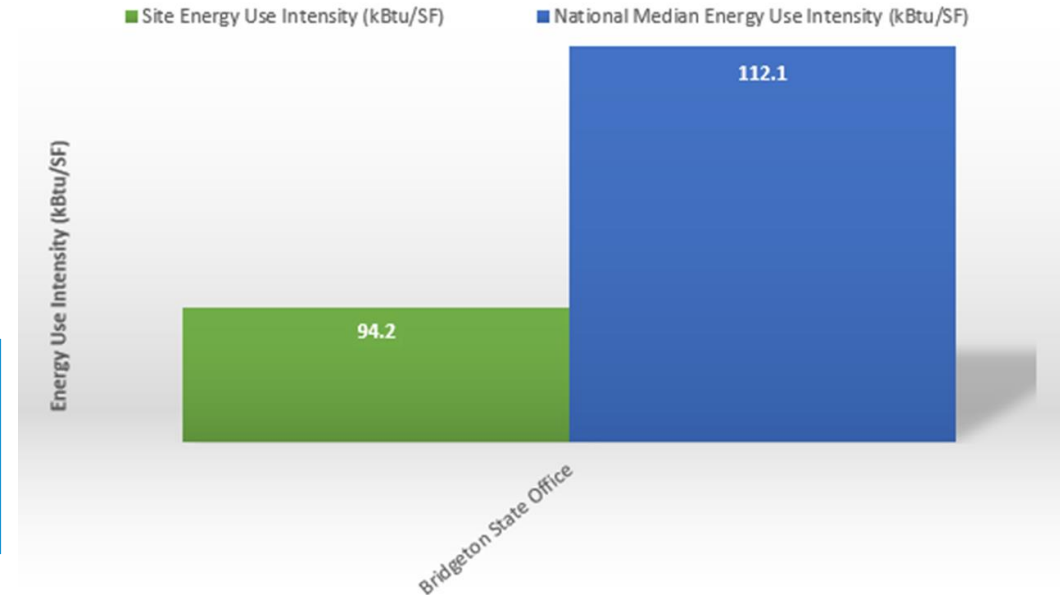
Source EUI
193.9 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	112.1
National Median Source EUI (kBtu/ft²)	230.7
% Diff from National Median Source EUI	-16%

Annual Emissions

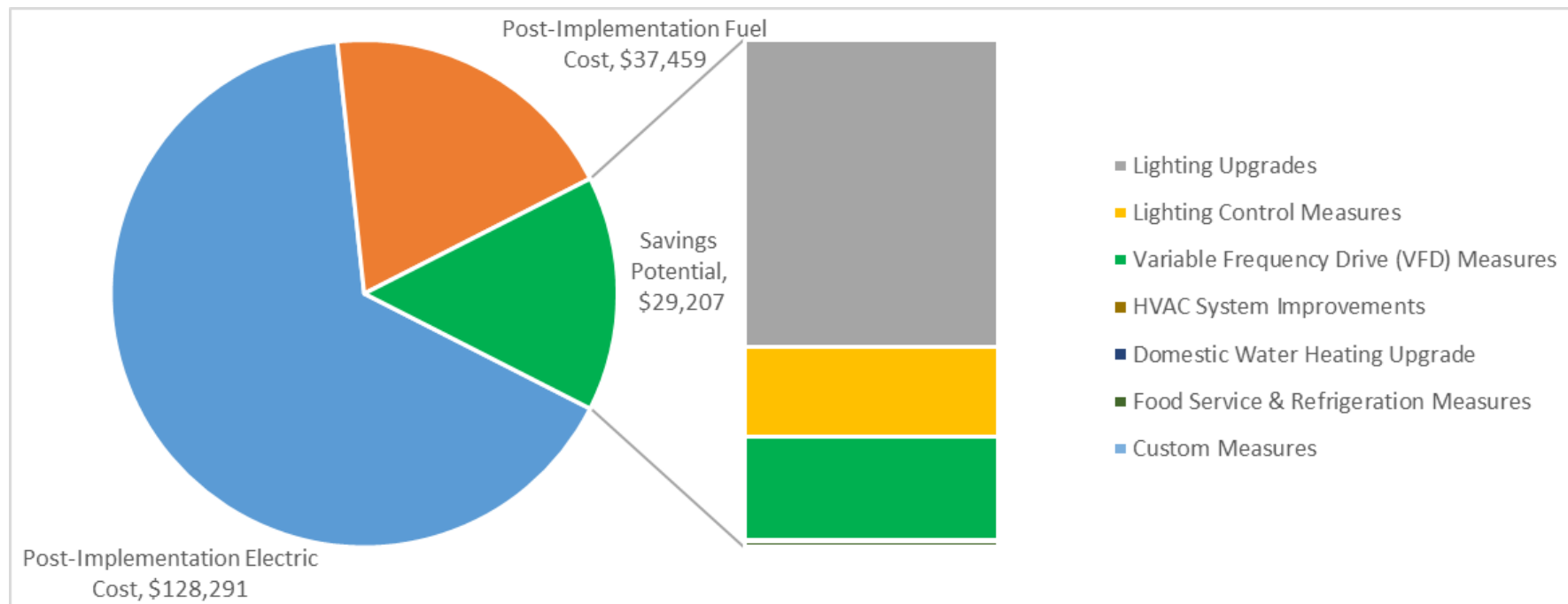
Total (Location-Based) GHG Emissions (Metric Tons CO2e/year)	385
--	-----



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.

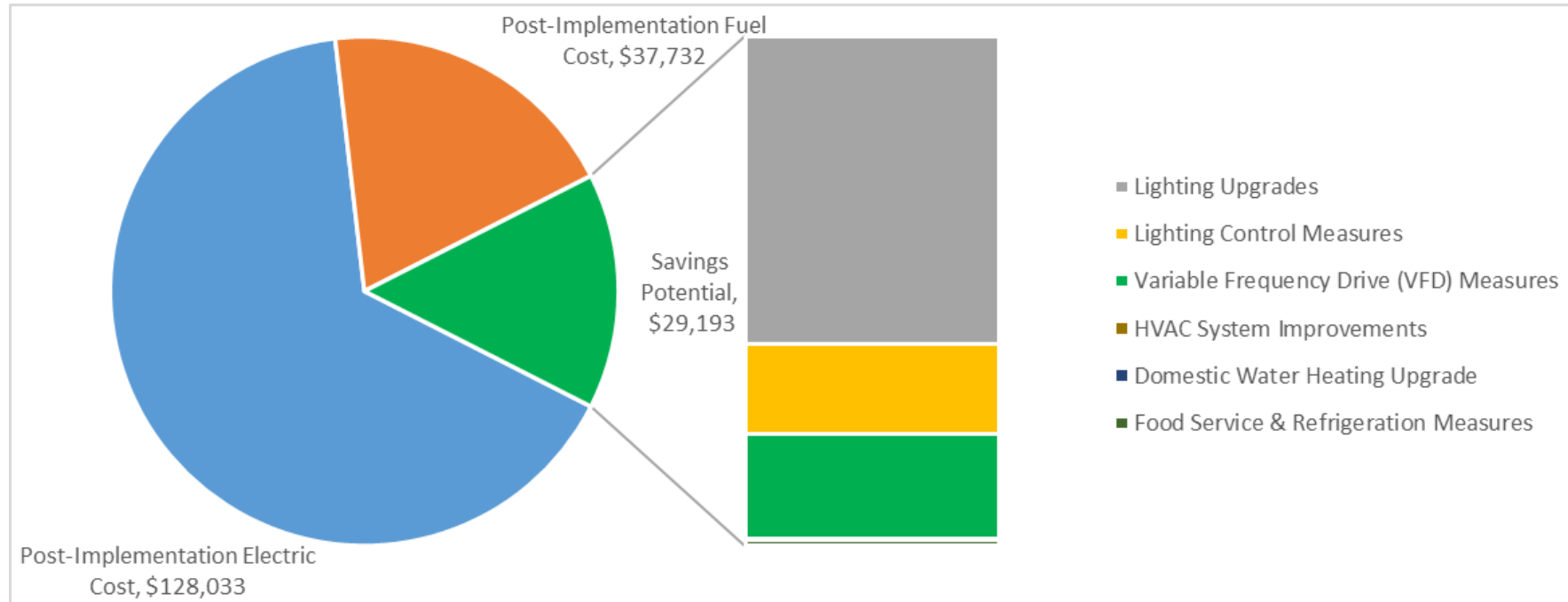
ALL OPPORTUNITIES

Savings Potential



COST EFFECTIVE OPPORTUNITIES

Savings Potential



BRIDGETON STATE OFFICE

#	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 ₂ e Emissions Reduction (lbs)
Lighting Upgrades			103,059	29.7	-21	\$17,663	\$33,650	\$9,710	\$23,940	1.4	101,270
ECM 1	Install LED Fixtures	Yes	578	0.0	0	\$101	\$520	\$100	\$420	4.2	582
ECM 2	Retrofit Fixtures with LED Lamps	Yes	102,481	29.7	-21	\$17,562	\$33,130	\$9,610	\$23,520	1.3	100,688
Lighting Control Measures			30,133	8.3	-6	\$5,164	\$27,330	\$6,110	\$21,220	4.1	29,606
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	25,153	7.4	-5	\$4,310	\$23,880	\$3,540	\$20,340	4.7	24,713
ECM 4	Install High/Low Lighting Controls	Yes	4,979	0.9	-1	\$853	\$3,450	\$2,570	\$880	1.0	4,892
Variable Frequency Drive (VFD) Measures			34,205	10.1	0	\$5,983	\$40,900	\$6,000	\$34,900	5.8	34,444
ECM 5	Install VFD on Variable Air Volume (VAV) Fans	Yes	23,056	8.9	0	\$4,033	\$23,800	\$4,000	\$19,800	4.9	23,218
ECM 6	Install VFDs on Heating Water Pumps	Yes	11,149	1.2	0	\$1,950	\$17,100	\$2,000	\$15,100	7.7	11,227
HVAC System Improvements			0	0.0	2	\$27	\$120	\$20	\$100	3.7	184
ECM 7	Install Pipe Insulation	Yes	0	0.0	2	\$27	\$120	\$20	\$100	3.7	184
Domestic Water Heating Upgrade			0	0.0	1	\$14	\$70	\$20	\$50	3.5	98
ECM 8	Install Low-Flow DHW Devices***	Yes	0	0.0	1	\$14	\$70	\$20	\$50	3.5	98
Food Service & Refrigeration Measures			1,954	0.2	0	\$342	\$460	\$50	\$410	1.2	1,968
ECM 9	Vending Machine Control	Yes	1,954	0.2	0	\$342	\$460	\$50	\$410	1.2	1,968
Custom Measures			-1,474	0.0	16	\$14	\$3,200	\$0	\$3,200	228.6	389
ECM 10	Replace Gas Fired Water Heater with Heat Pump Water Heater	No	-1,474	0.0	16	\$14	\$3,200	\$0	\$3,200	228.6	389
TOTALS (COST EFFECTIVE MEASURES)			169,351	48.3	-25	\$29,193	\$102,530	\$21,910	\$80,620	2.8	167,571
TOTALS (ALL MEASURES)			167,877	48.3	-9	\$29,207	\$105,730	\$21,910	\$83,820	2.9	167,960

* - 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).

*** - Associated water savings for Low-Flow DHW Devices found in Section 4.5

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

WATER BEST PRACTICES



- Leak Detection and Repair
- Toilets and Urinals
- Faucets and Showerheads
- Commercial Kitchen Equipment
- Laundry Equipment
- Cooling Towers
- 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

EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV

Know your EV Charging Stations



LEVEL 1	LEVEL 2	DIRECT CURRENT (DC) FAST CHARGING*
4-6 miles/hour Replenish Rate	10-20 miles/hour Replenish Rate	120-200 miles/hour Replenish Rate
7-30 hours for full charge Approximate time to charge a battery*	2-10 hours for full charge Approximate time to charge a battery*	20-90 minutes for full charge Approximate time to charge a battery*
CHARGE 110/120V	CHARGE 208/240V	CHARGE 480V or 208V

*dependent on the size of the battery

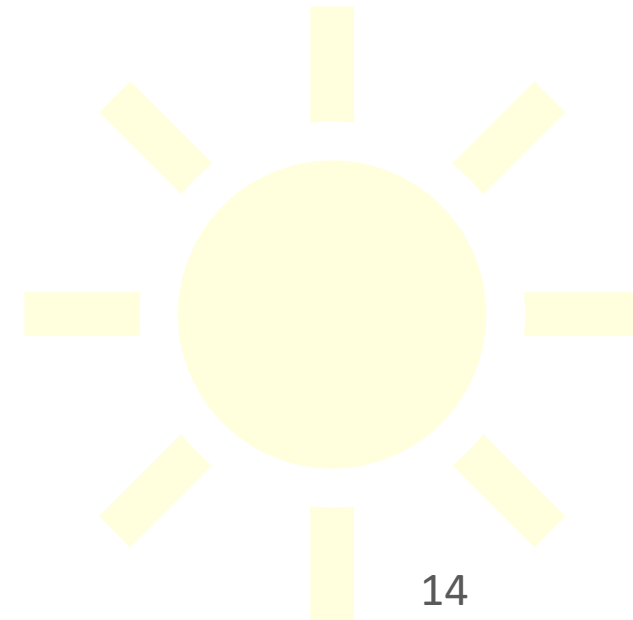
	Bridgeton State Office
Potential:	Medium



SOLAR ENERGY GENERATION POTENTIAL

NJCleanEnergy.com/renewable-energy

	Bridgeton State Office
<i>Potential:</i>	HIGH
<i>System Potential: (kW)</i>	129
<i>Electric Generation: (kWh per year)</i>	153,687
<i>Displaced Cost: (per year)</i>	\$26,880



FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

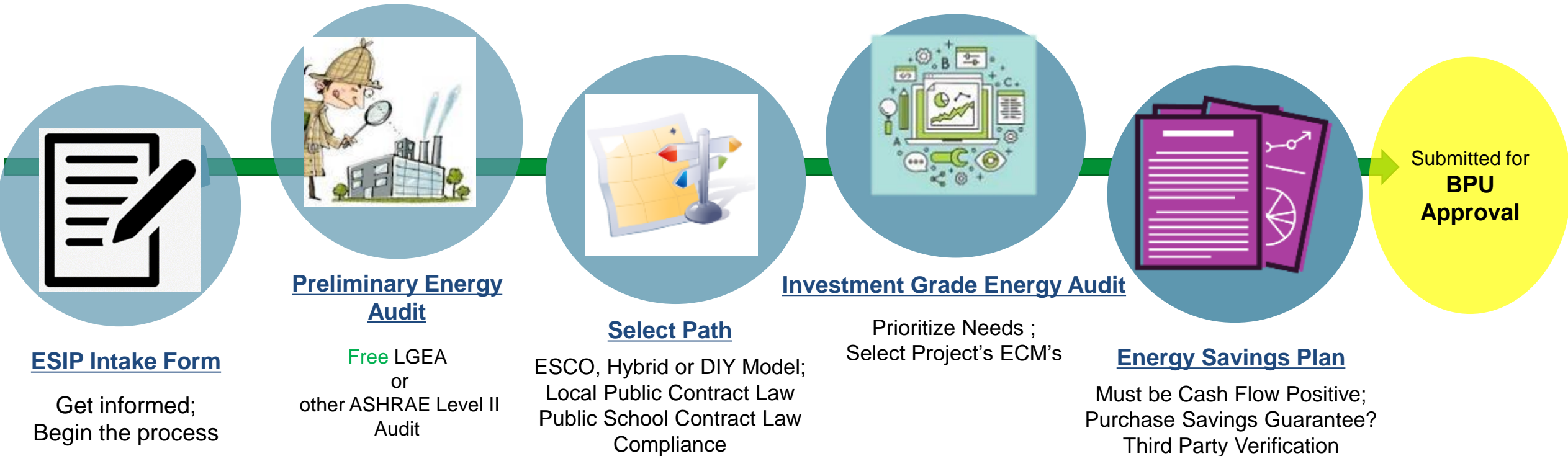
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- 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



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP



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)

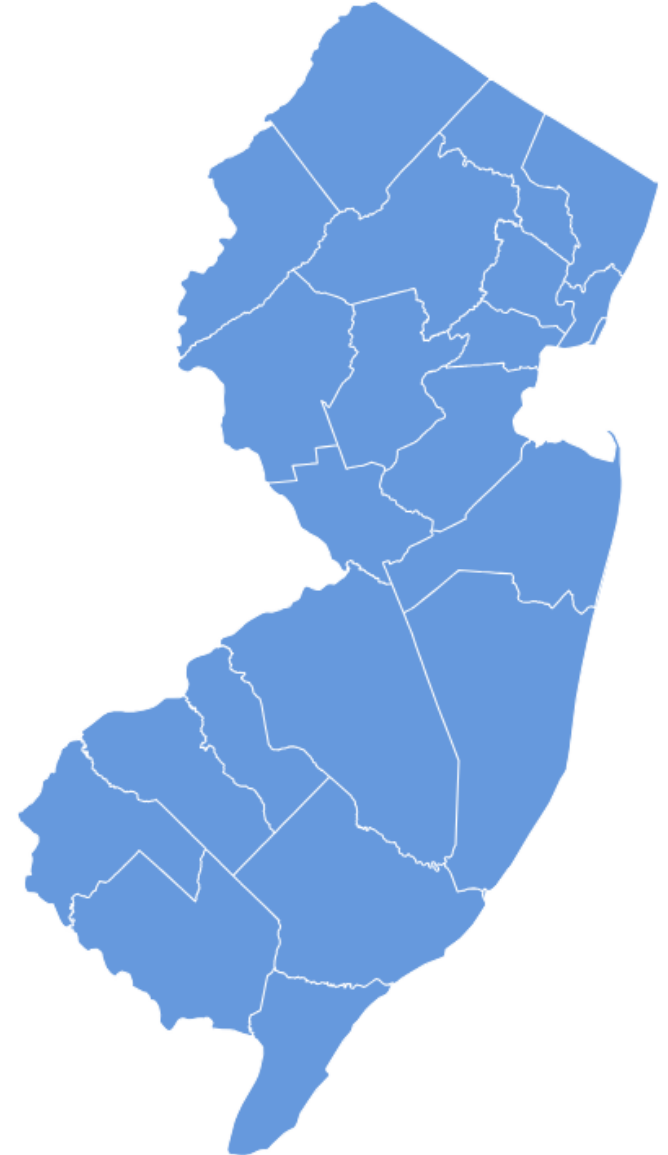
The State Facilities Initiative (SFI)

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

Atlantic City Electric

Paul Miles - Paul.Miles@exeloncorp.com
Greg Reinert - GReinert@trccompanies.com
Nicholas Jackson – NJackson@trccompanies.com

South Jersey Gas

Kim O'Donnell - KBodine@sjindustries.com
Kim Byk - KByk@appliedenergygroup.com
Ben Adams - BenAdams@magrann.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 $\geq 400\text{kW}$ 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

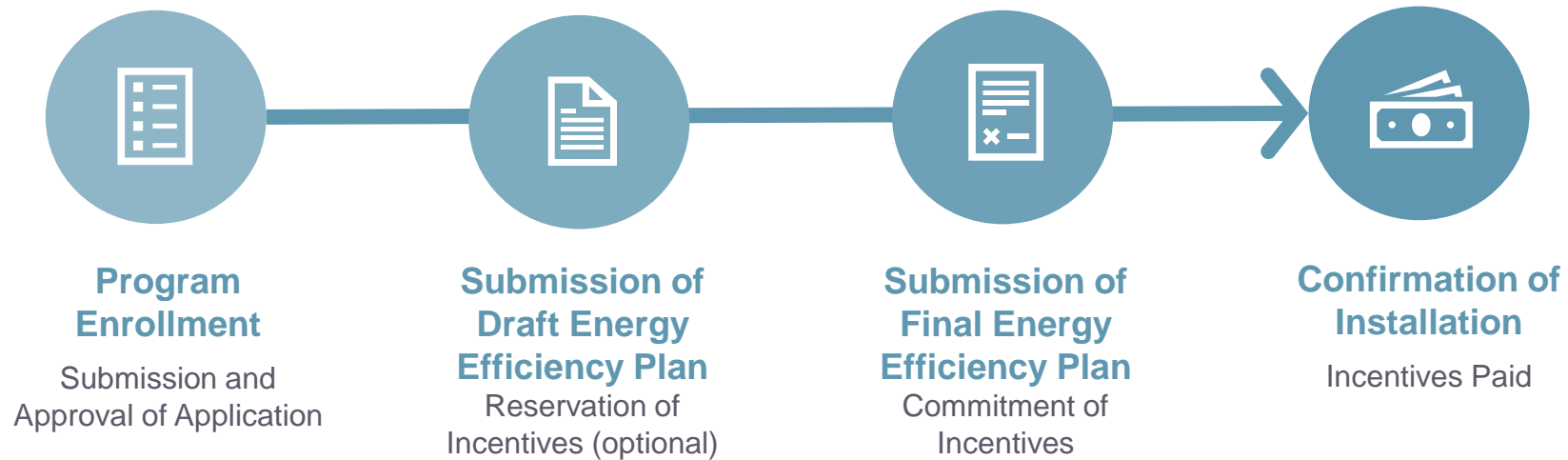
INCENTIVE CAP

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



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

Amanda Muench – LGEA Account Manager

AMuench@trccompanies.com

(732) 612-9381

Juno Romanick – LGEA Energy Auditor

JRomanick@trccompanies.com

(732) 674-1803

THANK YOU

