

LGEA Presentation

Bleshman Regional Day School

November 30, 2023

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future



INTRODUCTIONS

- *Bleshman Regional Day School*
 - Robert Cueto – DOE Energy Manager
 - Thomas Jodice – Operations Manager
 - John Susino – School Business Administrator
- BPU
 - Sara Bluhm Gibson
 - Yulia Grinberg
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Juno Romanick – LGEA Project Auditor
 - Melissa Lott – LGEA Account Manager

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 Bleshman Day School

LGEA PROCESS

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



BLESHMAN REGIONAL DAY SCHOOL

Overview of Systems, Baseline & Existing Conditions:

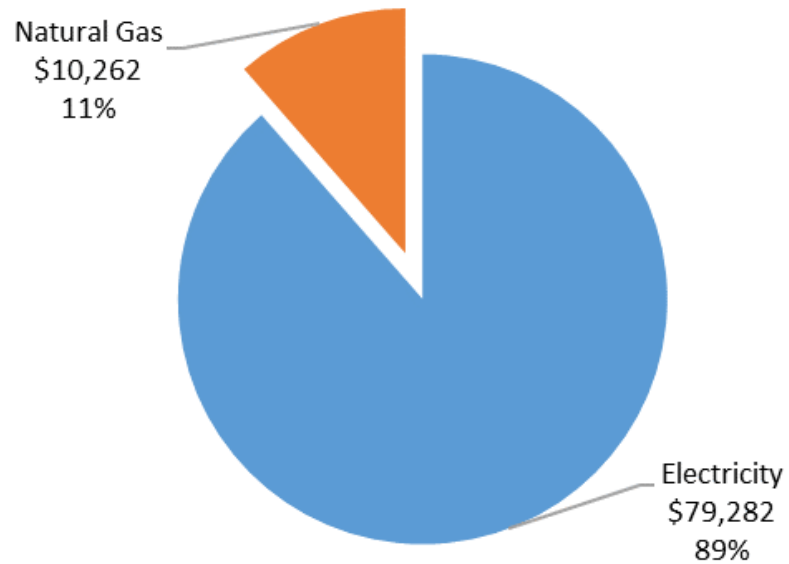
- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Refrigeration
- Food Service Equipment

Utility Consumption:

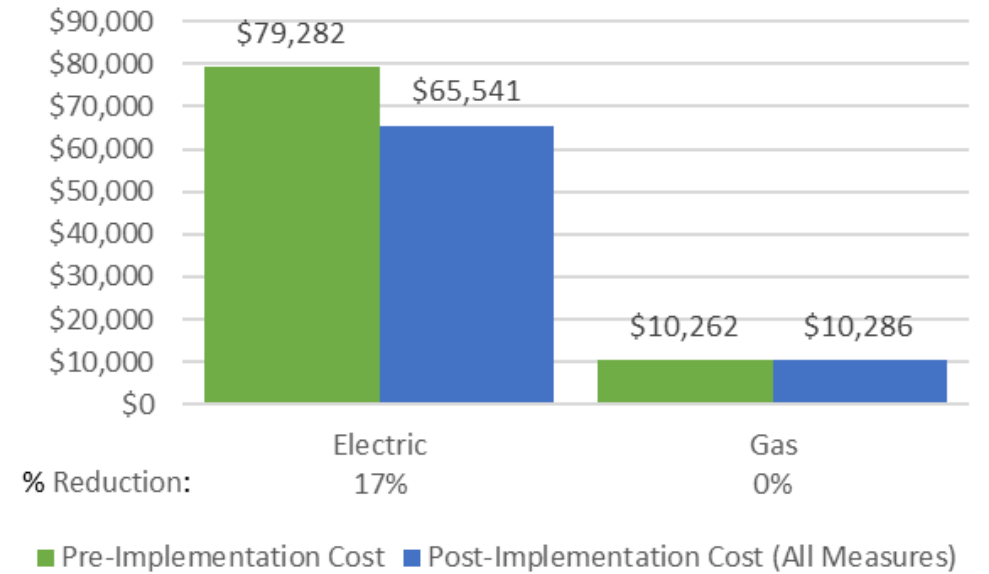
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Water Consumption and Costs

UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

45

ENERGY STAR® Score

DOE - Bleshman Regional Day School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 46,500
Built: 1981

For Year Ending: January 31, 2023
Date Generated: September 20, 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 DOE - Bleshman Regional Day School 333 East Ridgewood Avenue Paramus, New Jersey 07652	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
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Property ID: 28242335

Energy Consumption and Energy Use Intensity (EUI)

Site EUI 68.5 kBtu/ft²	Annual Energy by Fuel Electric - Grd (kBtu) 2,019,340 (63%) Natural Gas (kBtu) 1,166,493 (37%)	National Median Comparison National Median Site EUI (kBtu/ft²) 65.7 National Median Source EUI (kBtu/ft²) 141.9 % Diff from National Median Source EUI 4%
Source EUI 147.9 kBtu/ft²	Annual Emissions Total (Location-based) GHG Emissions (Metric Tons CO2e/year) 243	

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
68.5 kBtu/ft²

Source EUI
147.9 kBtu/ft²

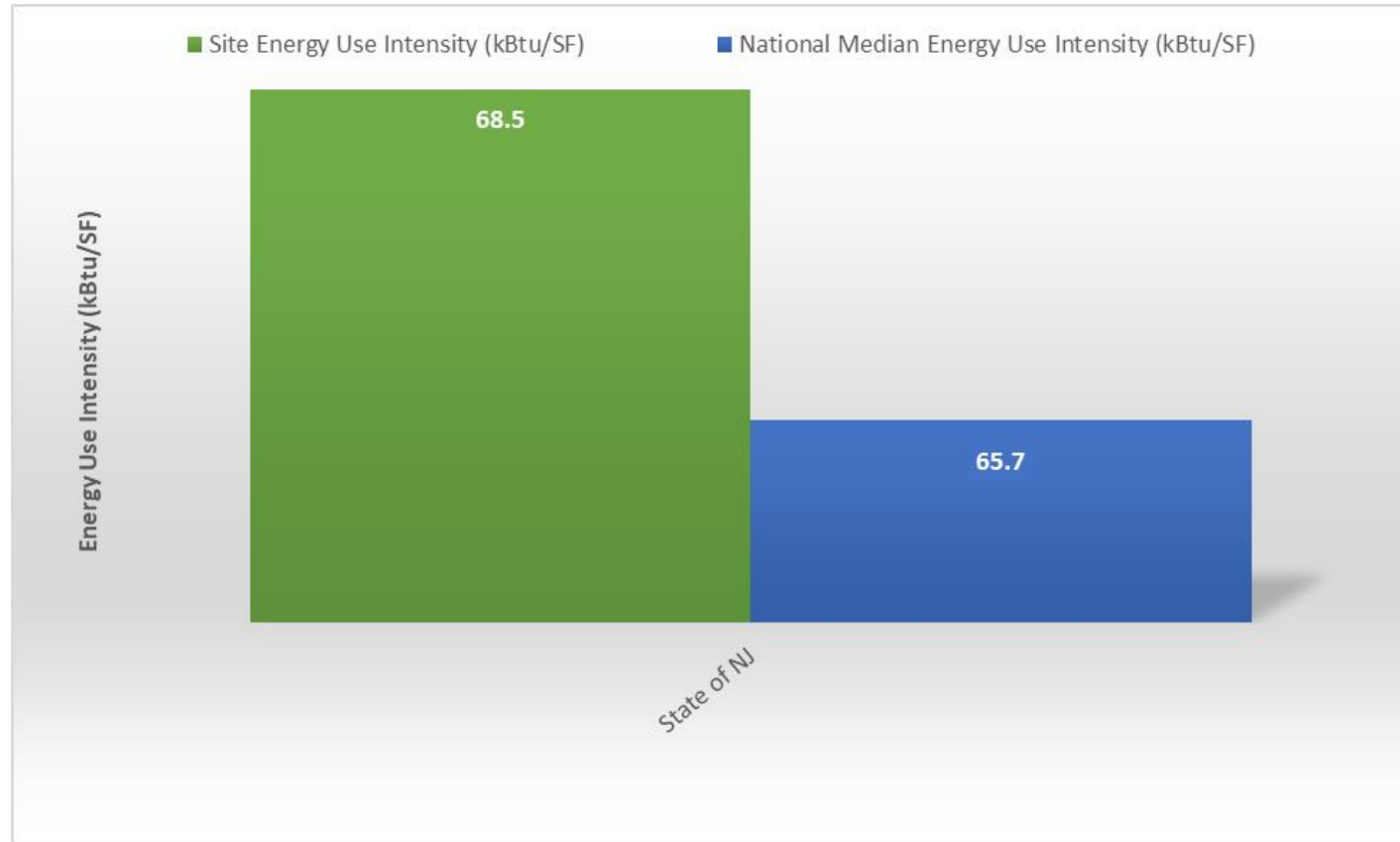
National Median Comparison

National Median Site EUI (kBtu/ft²)	65.7
National Median Source EUI (kBtu/ft²)	141.9
% Diff from National Median Source EUI	4%

Site Name	ENERGY STAR® Score
Bleshman Regional Day School	45

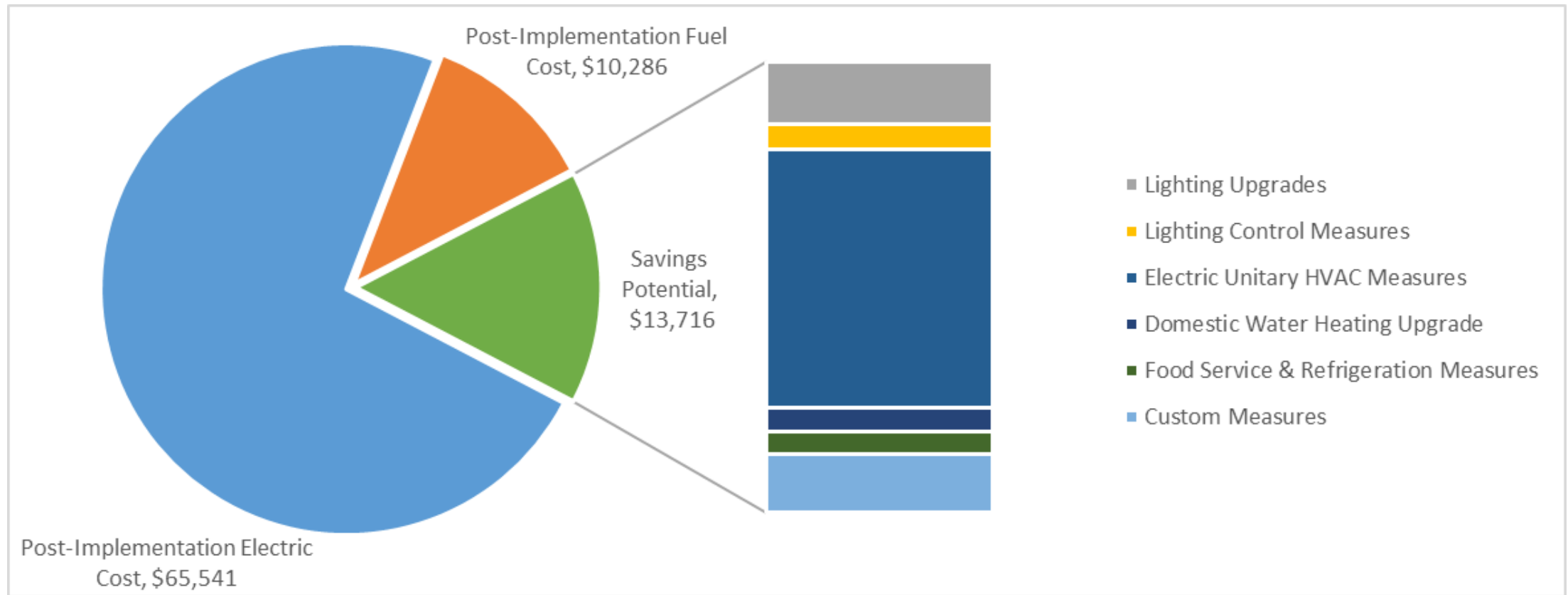
ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

BENCHMARKING



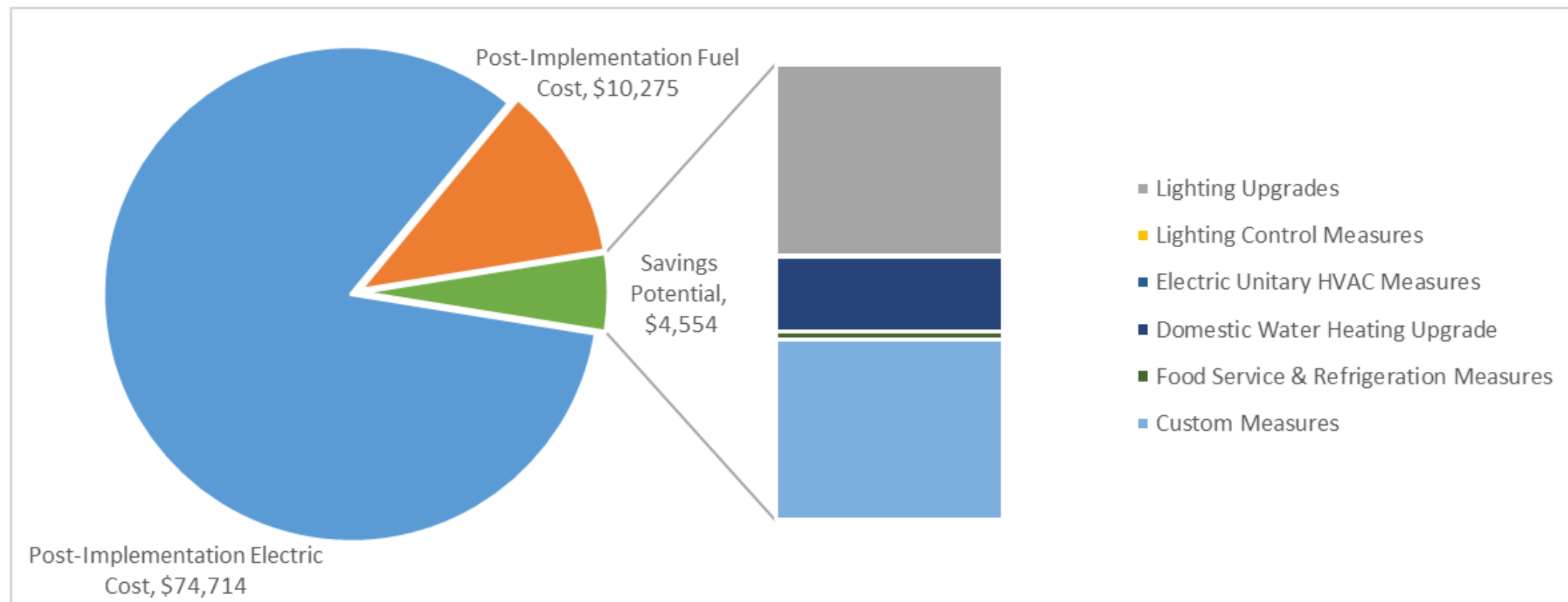
ALL OPPORTUNITIES

Savings Potential



COST EFFECTIVE OPPORTUNITIES

Savings Potential



BLESHMAN REGIONAL DAY SCHOOL

#	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 ₂ e Emissions Reduction (lbs)
Lighting Upgrades		14,459	1.6	-1.4	\$1,911	\$10,290	\$1,280	\$9,010	4.7	14,392
ECM 1	Install LED Fixtures	7,573	0.0	0.0	\$1,007	\$6,580	\$650	\$5,930	5.9	7,626
ECM 2	Retrofit Fixtures with LED Lamps	6,886	1.6	-1.4	\$903	\$3,710	\$630	\$3,080	3.4	6,766
Lighting Control Measures		5,876	1.3	-1.2	\$771	\$17,860	\$2,310	\$15,550	20.2	5,773
ECM 3	Install Occupancy Sensor Lighting Controls	5,750	1.3	-1.2	\$754	\$17,580	\$2,170	\$15,410	20.4	5,650
ECM 4	Install High/Low Lighting Controls	125	0.0	0.0	\$16	\$280	\$140	\$140	8.5	123
Unitary HVAC Measures		58,810	31.0	0.0	\$7,823	\$265,000	\$11,000	\$254,000	32.5	59,221
ECM 5	Install High Efficiency Air Conditioning Units	58,810	31.0	0.0	\$7,823	\$265,000	\$11,000	\$254,000	32.5	59,221
Domestic Water Heating Upgrade		5,634	0.0	0.0	\$750	\$450	\$210	\$240	0.3	5,674
ECM 6	Install Low-Flow DHW Devices	5,634	0.0	0.0	\$750	\$450	\$210	\$240	0.3	5,674
Food Service & Refrigeration Measures		4,974	0.4	0.0	\$662	\$12,880	\$630	\$12,250	18.5	5,009
ECM 7	Refrigerator/Freezer Case Electrically Commutated Motors	578	0.1	0.0	\$77	\$1,120	\$120	\$1,000	13.0	582
ECM 8	Refrigeration Controls	1,808	0.0	0.0	\$241	\$4,760	\$210	\$4,550	18.9	1,821
ECM 9	Replace Refrigeration Equipment	2,589	0.3	0.0	\$344	\$7,000	\$300	\$6,700	19.5	2,607
Custom Measures		13,541	0.0	0.0	\$1,801	\$15,200	\$0	\$15,200	8.4	13,636
ECM 10	Replace Electric Water Heater with Heat Pump Water Heater	13,541	0.0	0.0	\$1,801	\$15,200	\$0	\$15,200	8.4	13,636
TOTALS (ALL MEASURES)		103,294	34.2	-2.7	\$13,716	\$321,680	\$15,430	\$306,250	22.3	103,704

* - 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

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

MEASURES FOR FUTURE CONSIDERATION

- VRF Systems
 - Multiple indoor units connected to a common outdoor unit
 - Scalability
 - Variable capacity
 - Distributed control
 - Simultaneous heating and cooling capability

EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV

Know your EV Charging Stations



LEVEL 1



4-6 miles/hour
Replenish Rate



7-30 hours for full charge

Approximate time to charge a battery*

CHARGE
110/120V

LEVEL 2



10-20 miles/hour
Replenish Rate



2-10 hours for full charge

Approximate time to charge a battery*

CHARGE
208/240V

DIRECT CURRENT (DC) FAST CHARGING*



120-200 miles/hour
Replenish Rate



20-90 minutes for full charge

Approximate time to charge a battery*

CHARGE
480V or 208V

*dependent on the size of the battery

Bleshman Day School

Potential:

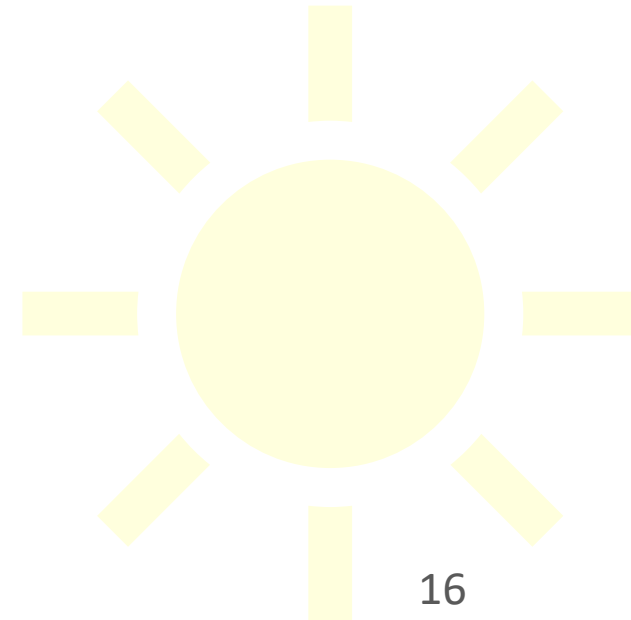
Medium



SOLAR ENERGY GENERATION POTENTIAL

NJCleanEnergy.com/renewable-energy

	Bleshman Day School
<i>Potential:</i>	HIGH
<i>System Potential: (kW)</i>	132
<i>Electric Generation: (kWh per year)</i>	157,261
<i>Displaced Cost: (per year)</i>	\$20,920



FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

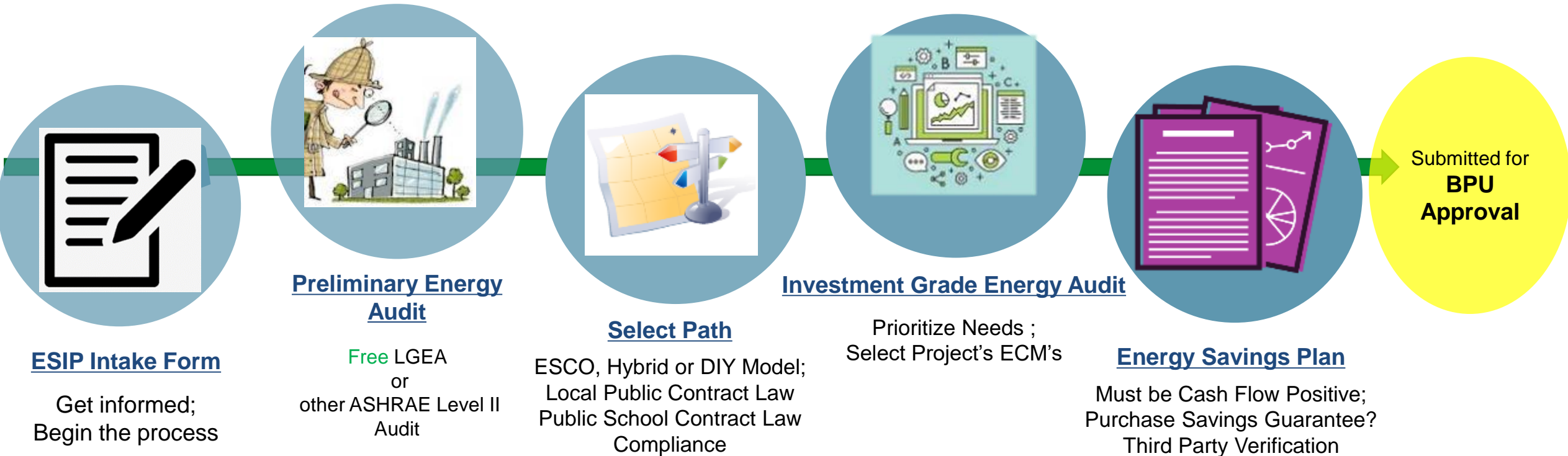
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- 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

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ESIP Coordinator

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STATE FACILITIES INITIATIVE (SFI)

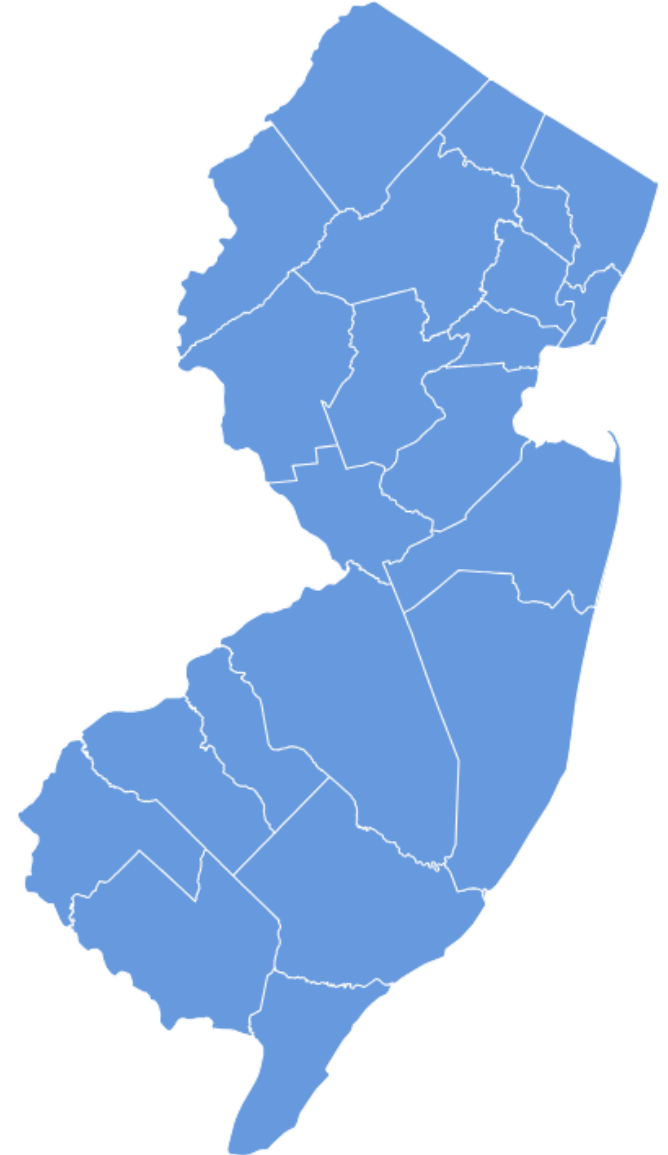
The State Facilities Initiative (SFI)

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 $\geq 400\text{kW}$ 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

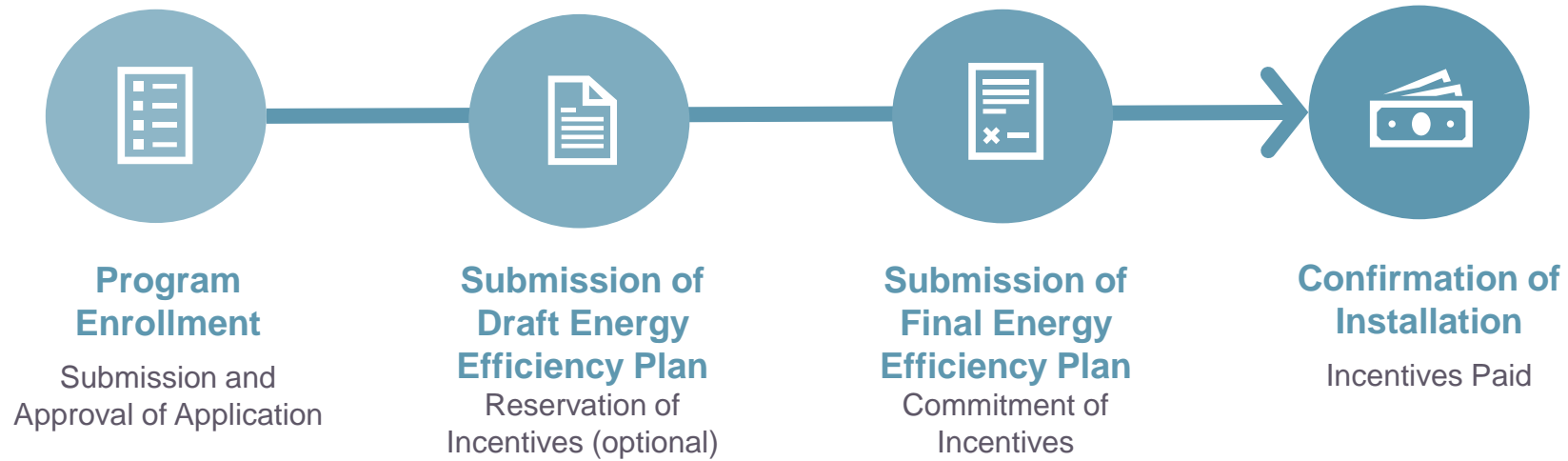
INCENTIVE CAP

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



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THANK YOU

