LGEA Presentation

State of NJ – Department of Health (PHEAL)

January 19, 2024

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

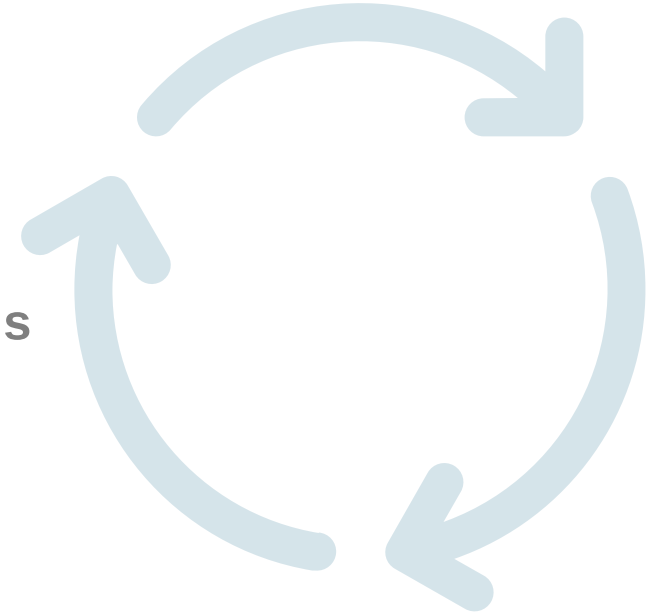
- *PHEAL*
  - David Markunas – Operations Manager
  - Robin Wilson – NC Regional Director
  - Joe Franklin – Facilities Director
  - Ron Doherty – Facilities Director
- *NJ Clean Energy Program*
  - Sarah Walters – LGEA Project Manager
  - Moussa Traore – LGEA Technical Manager
  - Amanda Muench – LGEA Account Manager
  - Sara Bluhm – BPU
  - Yulia Herhel – BPU
  - Casey Shaw – BPU

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 PHEAL

LGEA Process

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



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MID-STATE CORRECTIONAL FACILITY

Overview of Systems, Baseline & Existing Conditions:

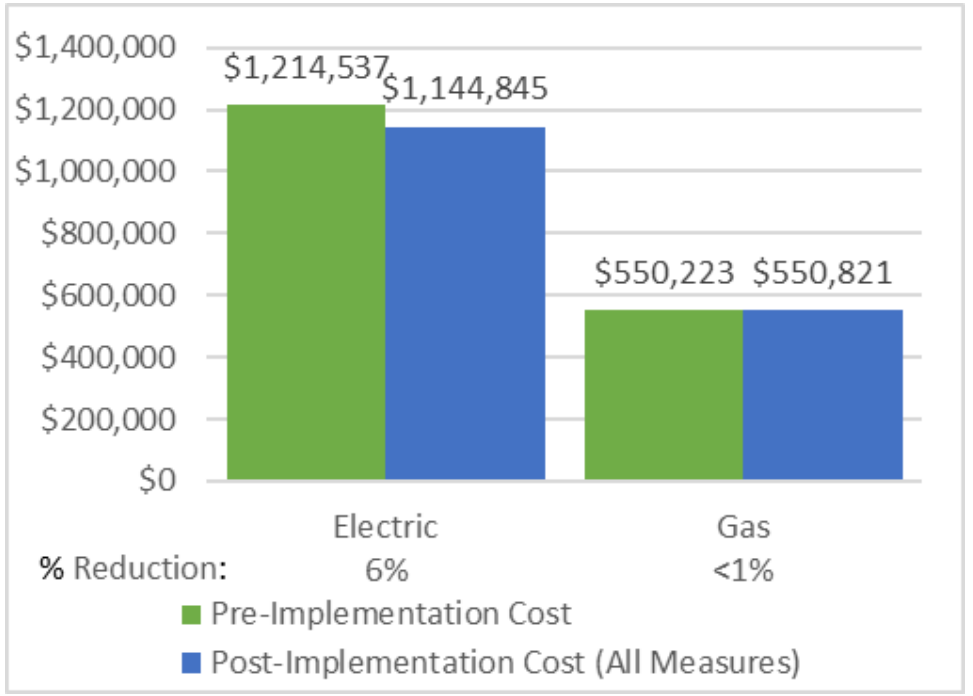
- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Lab Process & Refrigeration Equipment

Utility Consumption:

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

UTILITY BREAKOUT

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]

DOH - Public Health Environmental and Agricultural Laboratories (PHEAL)

Primary Property Type: Laboratory
Gross Floor Area (ft²): 203,665
Built: 2010

For Year Ending: January 31, 2023
Date Generated: October 24, 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
DOH - Public Health Environmental and Agricultural Laboratories (PHEAL) 3 Schwarzkopf Drive West Trenton, New Jersey 08628	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: 28480559

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
438.1 kBtu/ft²

Source EUI
714.4 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu)	29,622,427 (33%)
Electric - Solar (kBtu)	518,405 (1%)
Natural Gas (kBtu)	59,078,432 (66%)

National Median Comparison

National Median Site EUI (kBtu/ft²)	195.1
National Median Source EUI (kBtu/ft²)	318.2
% Diff from National Median Source EUI	124%
Annual Emissions	
Total (Location-Based) GHG Emissions (Metric Tons CO2e/year)	5,800

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
438.1 kBtu/ft²

Source EUI
714.4 kBtu/ft²

National Median Comparison

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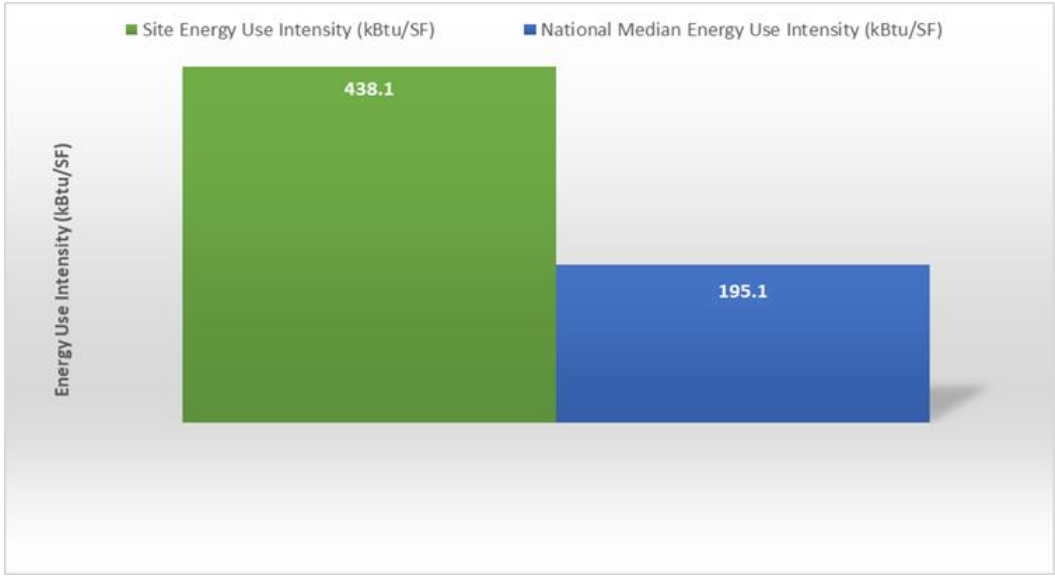

ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

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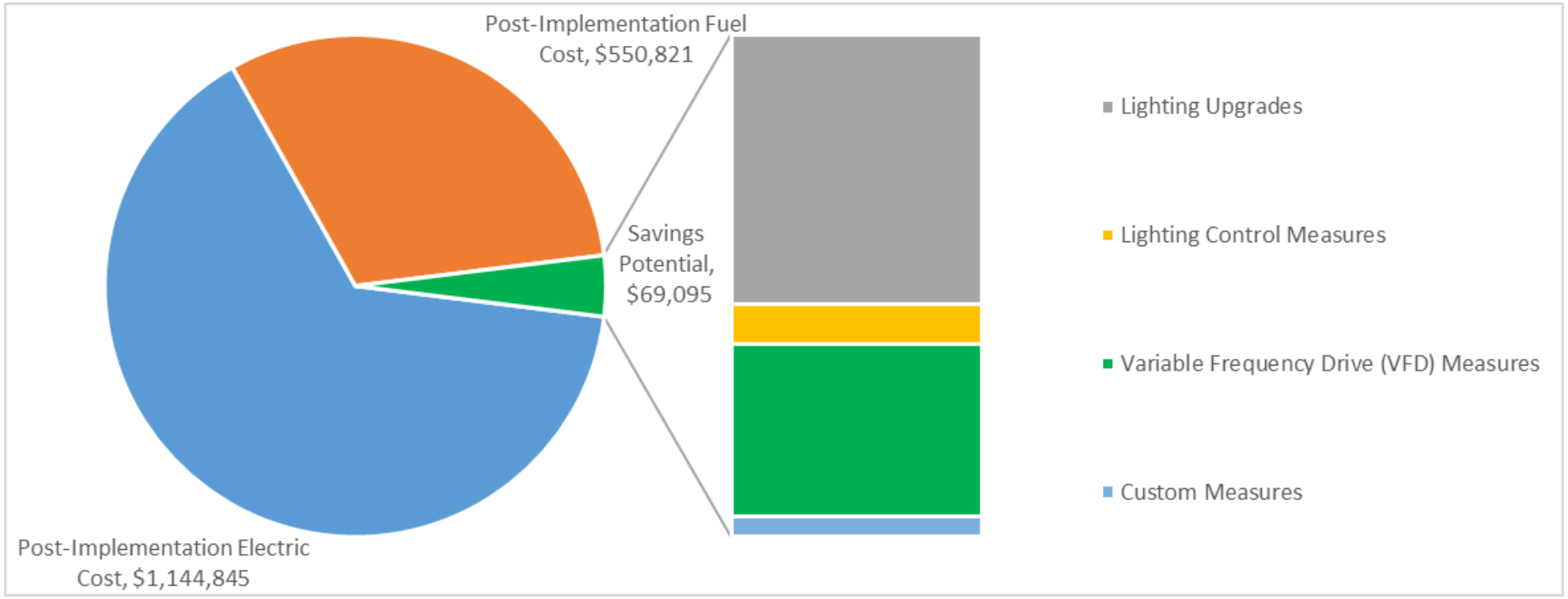
All Opportunities



DEPT. OF HEALTH (PHEAL)

#	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			**268,518**	**84.3**	**-55**	**$37,053**	**$171,260**	**$25,630**	**$145,630**	**3.9**	**263,978**
ECM 1	Install LED Fixtures	Yes	21,618	11.0	-4	$2,984	$27,760	$2,100	$25,660	8.6	21,268
ECM 2	Retrofit Fixtures with LED Lamps	Yes	237,551	69.9	-51	$32,761	$137,710	$22,730	$114,980	3.5	233,297
ECM 3	Install LED Refrigerated Case Lighting	Yes	9,348	3.4	0	$1,308	$5,790	$800	$4,990	3.8	9,414
Lighting Control Measures			**39,323**	**8.8**	**-8**	**$5,424**	**$43,870**	**$15,420**	**$28,450**	**5.2**	**38,632**
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	32,826	7.2	-7	$4,528	$27,840	$4,450	$23,390	5.2	32,252
ECM 5	Install High/Low Lighting Controls	Yes	6,497	1.6	-1	$896	$16,030	$10,970	$5,060	5.6	6,380
Variable Frequency Drive (VFD) Measures			**170,041**	**41.2**	**0**	**$23,788**	**$133,200**	**$14,500**	**$118,700**	**5.0**	**171,230**
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	18,902	3.9	0	$2,644	$33,200	$700	$32,500	12.3	19,034
ECM 7	Install Boiler Draft Fan VFDs	Yes	73,890	17.8	0	$10,337	$39,800	$4,800	$35,000	3.4	74,407
ECM 8	Install VFDs on Boiler Feedwater Pumps	Yes	32,804	15.1	0	$4,589	$26,800	$4,000	$22,800	5.0	33,033
ECM 9	Install VFDs on Water Supply Pump	Yes	44,446	4.4	0	$6,218	$33,400	$5,000	$28,400	4.6	44,756
Custom Measures			**20,223**	**0.0**	**0**	**$2,830**	**$17,200**	**$0**	**$17,200**	**6.1**	**20,364**
ECM 10	Replace Electric Water Heater with Heat Pump Water Heater	Yes	20,223	0.0	0	$2,830	$17,200	$0	$17,200	6.1	20,364
TOTALS (COST EFFECTIVE MEASURES)			**498,105**	**134.2**	**-63**	**$69,095**	**$365,530**	**$55,550**	**$309,980**	**4.5**	**494,205**
TOTALS (ALL MEASURES)			**498,105**	**134.2**	**-63**	**$69,095**	**$365,530**	**$55,550**	**$309,980**	**4.5**	**494,205**

* - 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

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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

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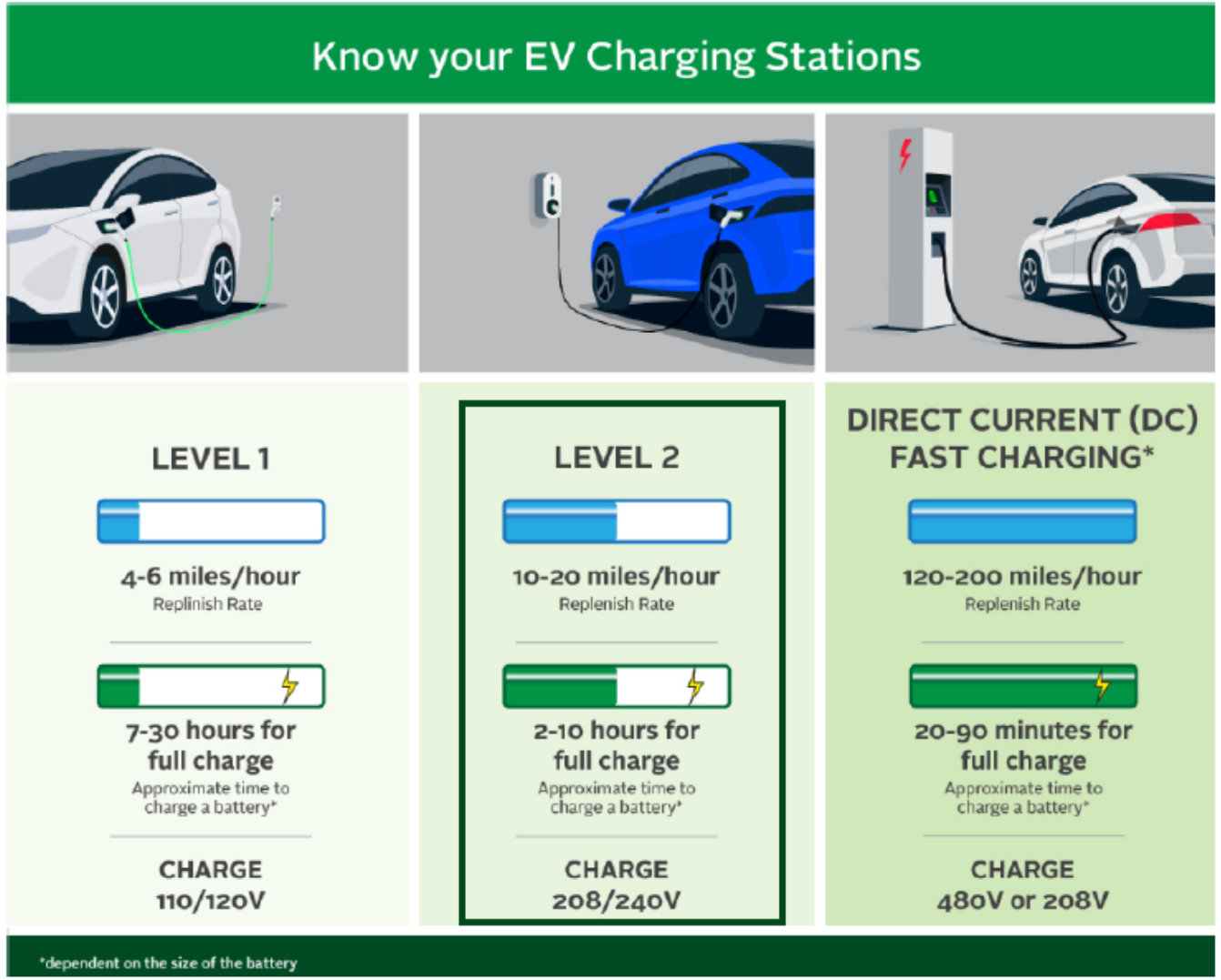
EV Charging Station Potential

NJCleanEnergy.com/EV



	DOH - PHEAL
Potential:	**Medium**

Solar Energy Generation Potential

NJCleanEnergy.com/renewable-energy

	DOH - PHEAL
Potential:	**HIGH**
System Potential: (kW)	1,073
Electric Generation: (kWh per year)	1,278,340
Displaced Cost: (per year)	$178,830

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

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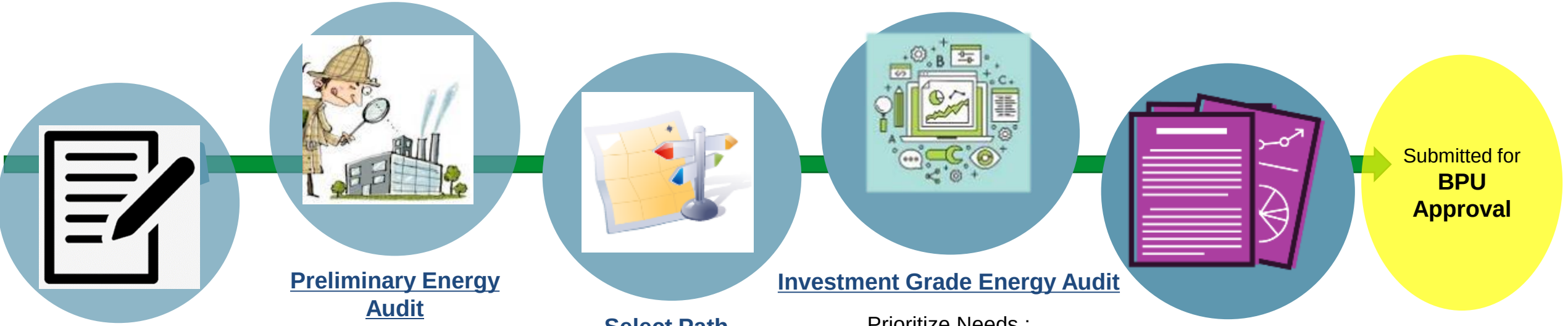
Energy Savings Improvement Program

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**

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Energy Savings Improvement Program

NJCleanEnergy.com/ESIP

FOR MORE INFORMATION

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ESIP Coordinator

ESIP@bpu.nj.gov

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c: 609.915.0903

State Facilities Initiative (SFI)

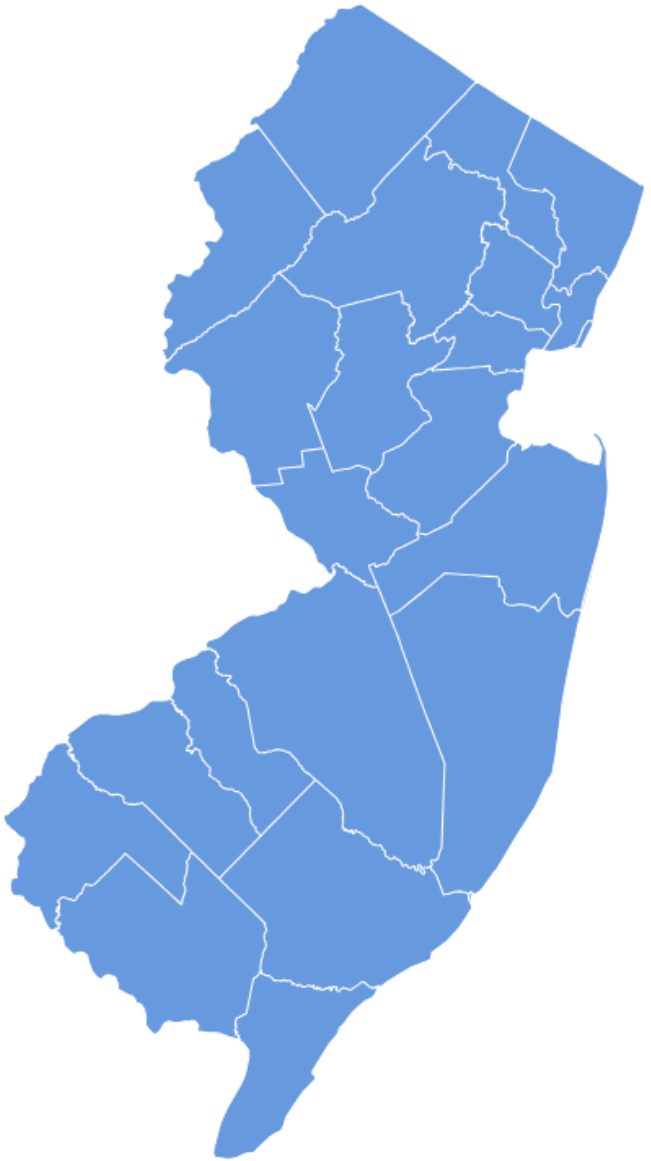
The State Facilities Initiative (SFI)

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

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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

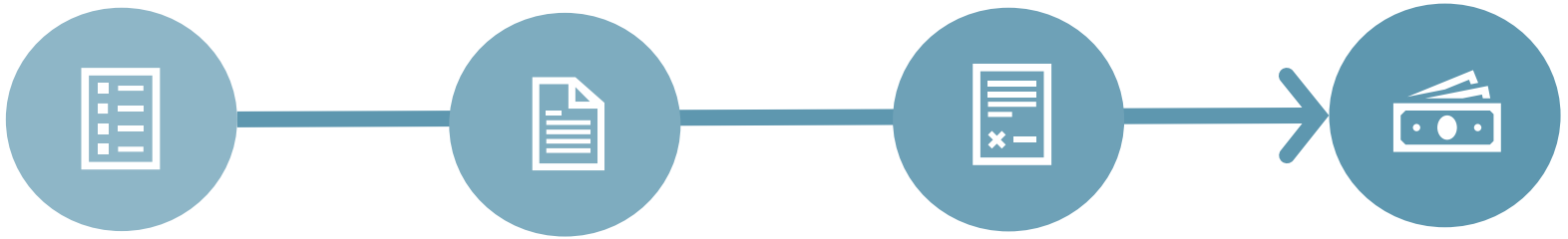
Large Energy Users

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

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THANK YOU