LGEA Presentation

77 Carroll St

March 25, 2025

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

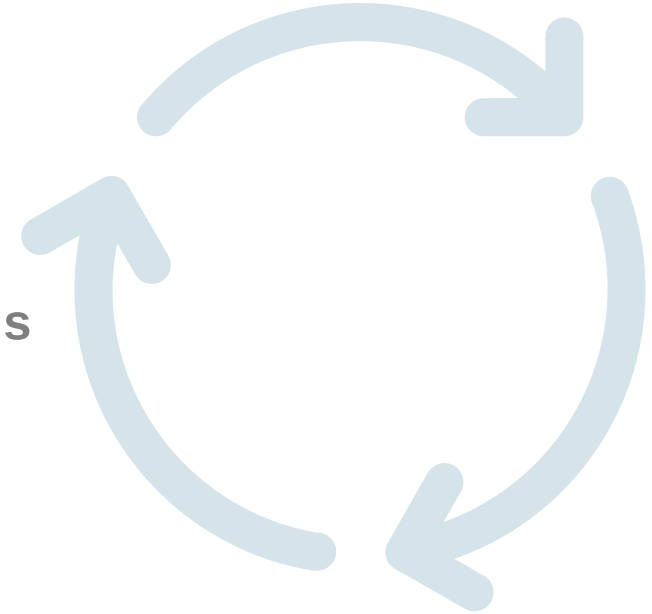
- *DEP – 77 Carroll St*
  - Pat Fitzgerald
  - Jerry Arlt
  - Jeffrey MacMullen
  - Laura Petrangeli
- *NJ Clean Energy Program*
  - Sarah Walters – LGEA Project Manager
  - Moussa Traore – LGEA Technical Manager
  - Sayje Essoka-Lasenberry – LGEA Project Auditor
  - Melissa Lott – LGEA Account Manager
- *NJ BPU*
  - Yulia Grinberg

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 77 Carroll St

LGEA Process

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



77 Carroll St

Overview of Systems, Baseline & Existing Conditions:

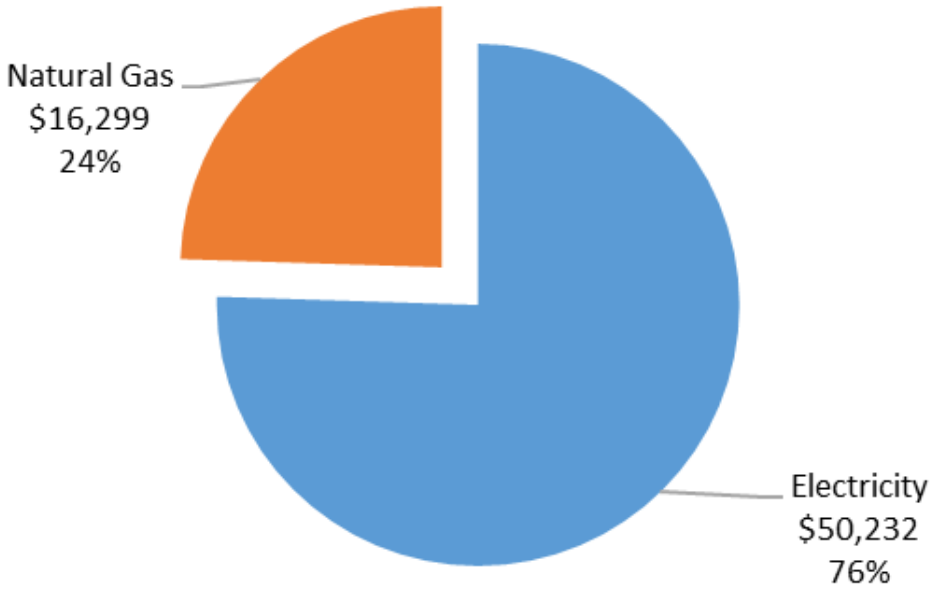
- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment

Utility Consumption:

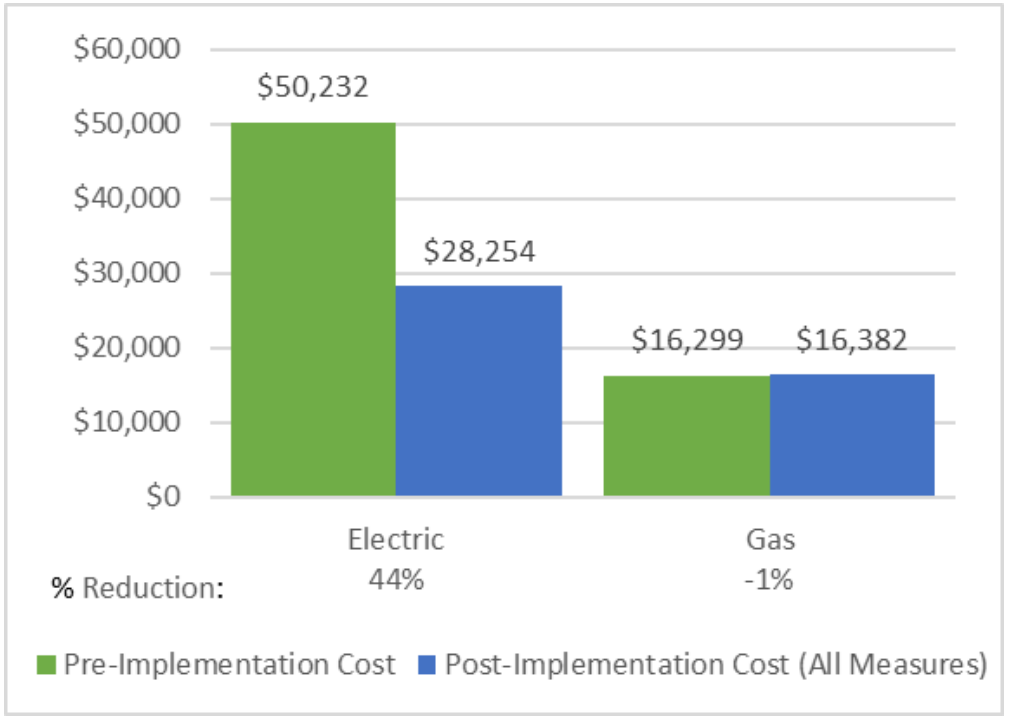
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Water Consumption and Costs

Utility Breakout

Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

40

ENERGY STAR® Score[1]

TREAS_Document Control Center (Carroll Street DCC)

Primary Property Type: Non-Refrigerated Warehouse
Gross Floor Area (ft²): 54,200
Built: 1950

For Year Ending: May 31, 2024
Date Generated: December 31, 2024

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
TREAS_Document Control Center (Carroll Street DCC) 77 Carroll Street Trenton, New Jersey 08609	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: 28625773
LBAM: 1181
UA: 1181-77 Carroll St (DCC)
Unique Building Identifier (UBID): 87G7[illegible]CR+XV8-23-13-21-12

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
46.5 kBtu/ft²

Source EUI
78.7 kBtu/ft²

Annual Energy by Fuel		Annual Emissions	
Electric - Grid (kBtu)	925,301 (37%)	Total (Location-Based) GHG Emissions (Metric Tons CO2e/year)	166
Natural Gas (kBtu)	1,595,443 (63%)		

National Median Comparison		Green Power	
National Median Site EUI (kBtu/ft²)	40	Green Power – Onsite (kWh)	N/A
National Median Source EUI (kBtu/ft²)	67.7	Green Power – Offsite (kWh)	0
% Diff from National Median Source EUI	16%	Percent of RECs Retained	N/A

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

___ _____
,
(___)___-____
_____

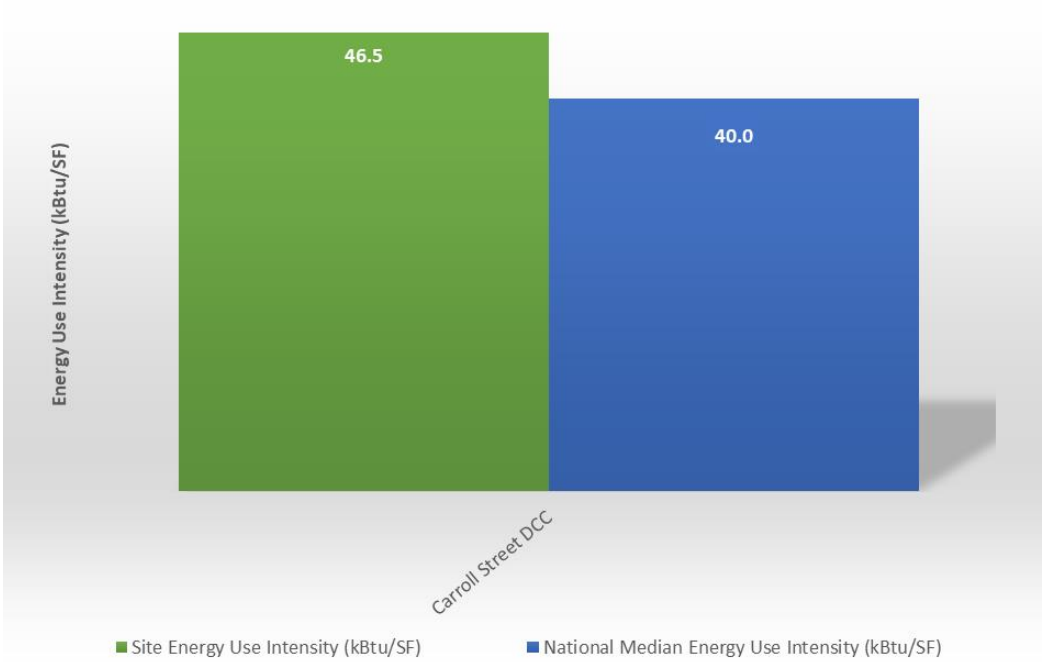
Professional Engineer or Registered Architect Stamp (if applicable)

Site EUI
46.5 kBtu/ft²

Source EUI
78.7 kBtu/ft²

National Median Comparison

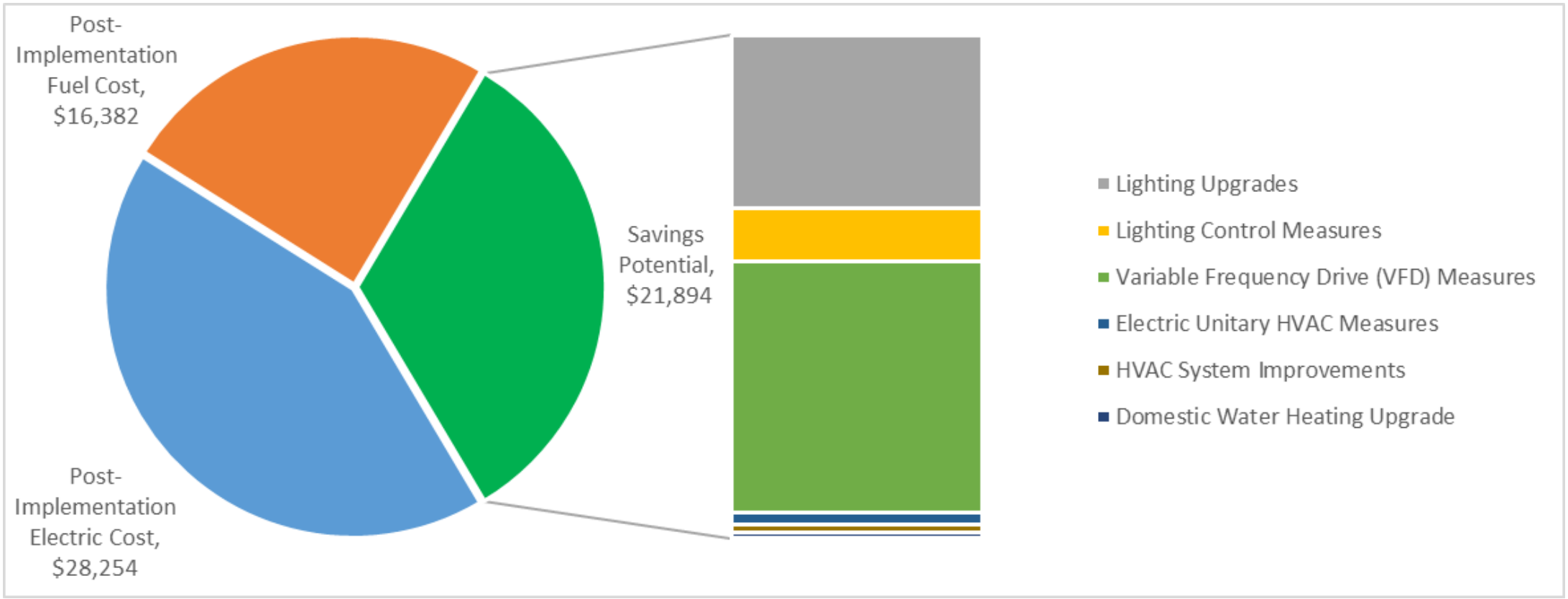
National Median Site EUI (kBtu/ft²)	40
National Median Source EUI (kBtu/ft²)	67.7
% Diff from National Median Source EUI	16%



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.

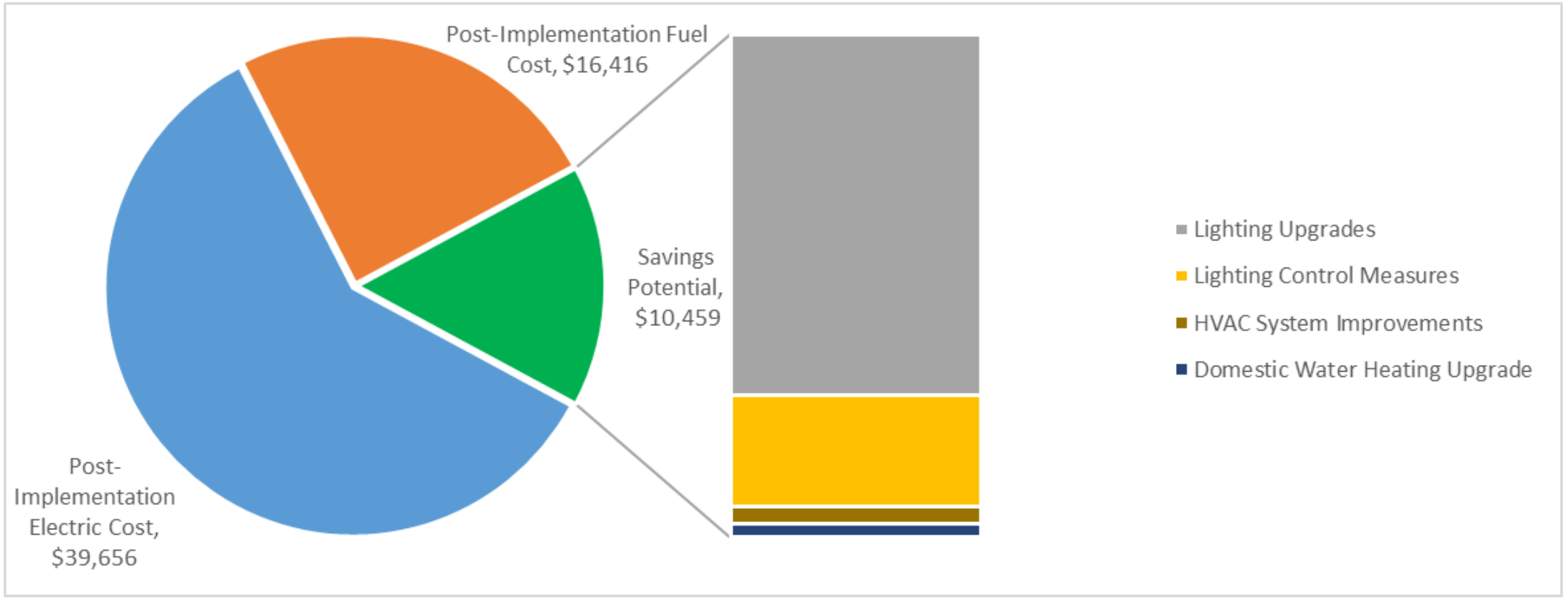
ALL OPPORTUNITIES

Savings Potential



Cost Effective Opportunities

Savings Potential



77 Carroll St

#	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			**40,650**	**41.2**	**-9**	**$7,507**	**$87,110**	**$16,680**	**$70,430**	**9.4**	**39,922**
ECM 1	Install LED Fixtures	Yes	2,529	0.2	0	$472	$2,590	$290	$2,300	4.9	2,540
ECM 2	Retrofit Fixtures with LED Lamps	Yes	38,121	40.9	-9	$7,035	$84,520	$16,390	$68,130	9.7	37,381
Lighting Control Measures			**12,578**	**13.8**	**-3**	**$2,321**	**$32,960**	**$28,840**	**$4,120**	**1.8**	**12,334**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	12,501	13.7	-3	$2,307	$32,120	$28,040	$4,080	1.8	12,258
ECM 4	Install High/Low Lighting Controls	Yes	77	0.1	0	$14	$840	$800	$40	2.8	76
Variable Frequency Drive (VFD) Measures			**58,477**	**21.8**	**0**	**$10,926**	**$256,900**	**$14,100**	**$242,800**	**22.2**	**58,886**
ECM 5	Install VFDs on Constant Volume (CV) Fans	No	55,592	21.5	0	$10,387	$238,200	$13,100	$225,100	21.7	55,981
ECM 6	Install VFDs on Heating Water Pumps	No	2,885	0.3	0	$539	$18,700	$1,000	$17,700	32.8	2,905
Unitary HVAC Measures			**2,543**	**3.2**	**3**	**$509**	**$107,400**	**$2,900**	**$104,500**	**205.3**	**2,948**
ECM 7	Install High Efficiency Air Conditioning Units	No	2,543	3.2	3	$509	$107,400	$2,900	$104,500	205.3	2,948
HVAC System Improvements			**1,903**	**0.0**	**0**	**$356**	**$2,410**	**$200**	**$2,210**	**6.2**	**1,916**
ECM 8	Install Programmable Thermostats	Yes	1,138	0.0	0	$213	$2,280	$180	$2,100	9.9	1,146
ECM 9	Install Pipe Insulation	Yes	765	0.0	0	$143	$130	$20	$110	0.8	770
Domestic Water Heating Upgrade			**1,472**	**0.0**	**0**	**$275**	**$100**	**$20**	**$80**	**0.3**	**1,482**
ECM 10	Install Low-Flow DHW Devices	Yes	1,472	0.0	0	$275	$100	$20	$80	0.3	1,482
TOTALS (COST EFFECTIVE MEASURES)			**56,603**	**55.0**	**-11**	**$10,459**	**$122,580**	**$45,740**	**$76,840**	**7.3**	**55,654**
TOTALS (ALL MEASURES)			**117,624**	**80.0**	**-8**	**$21,894**	**$486,880**	**$62,740**	**$424,140**	**19.4**	**117,489**

* - All incentives presented in this table are estimated from the utility run Prescriptive and Custom Rebate program at the beginning of the fiscal year. Always contact your utility provider for details on all 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

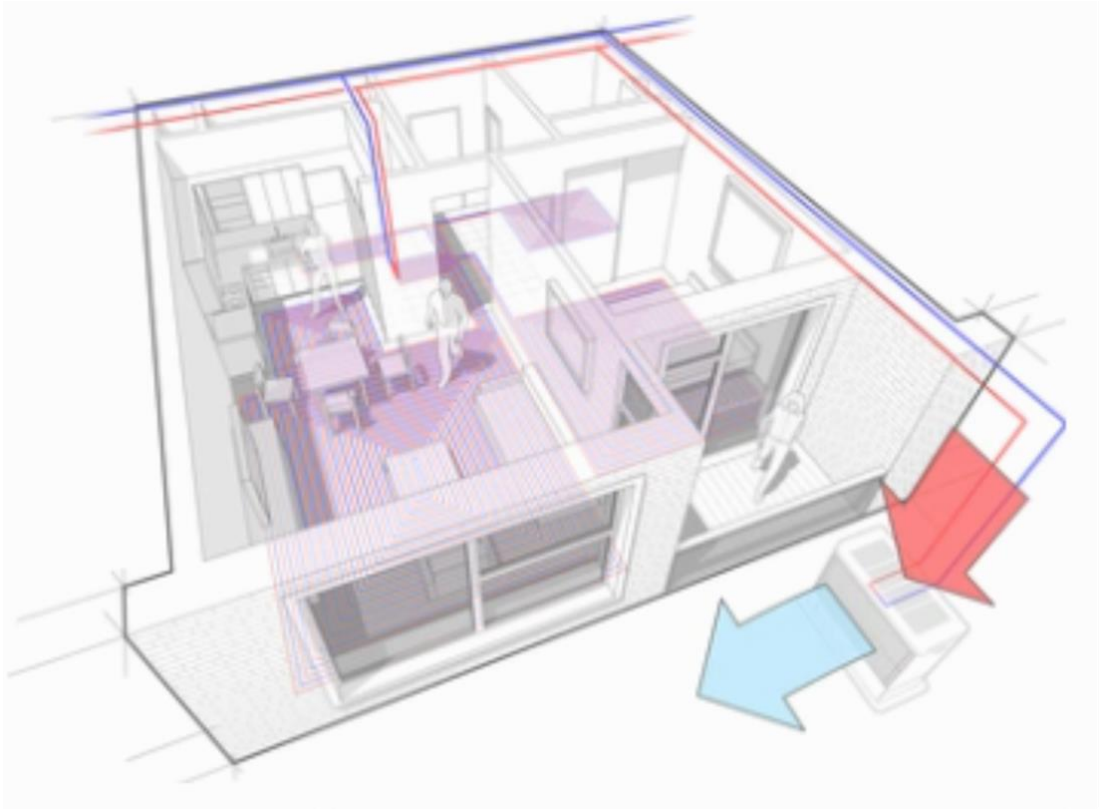
See individual reports for specific Water Best Practices by building

BPU New Jersey's cleanenergy program™

Measures for Future Consideration

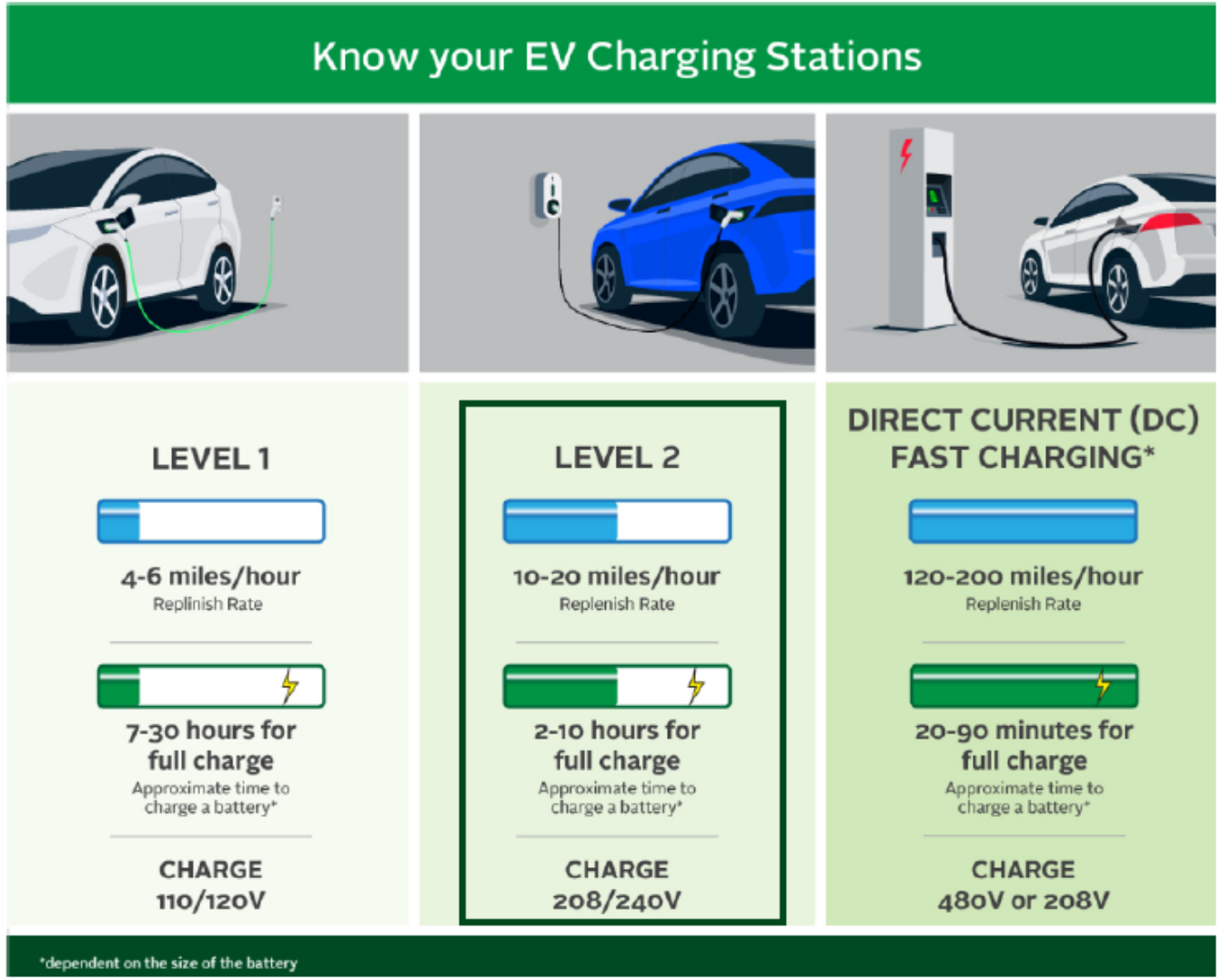
- Upgrade to a Heat Pump System

- VRF Systems



EV Charging Station Potential

NJCleanEnergy.com/EV



	77 Carroll St
Potential:	**Medium**

Solar Energy Generation Potential

NJCleanEnergy.com/renewable-energy

	77 Carroll St
Potential:	**HIGH**
System Potential: (kW)	94
Electric Generation: (kWh per year)	111,989
Displaced Cost: (per year)	$20,920

FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

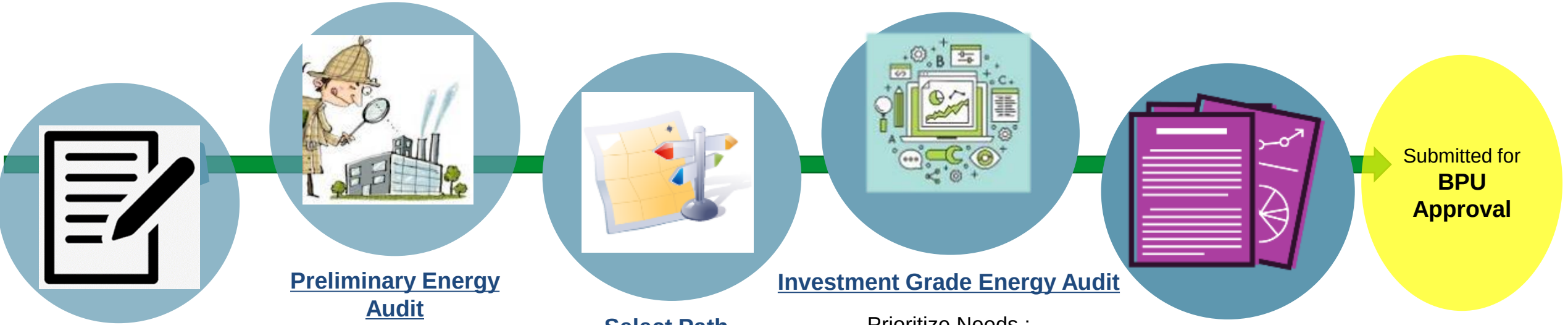
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- 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

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)

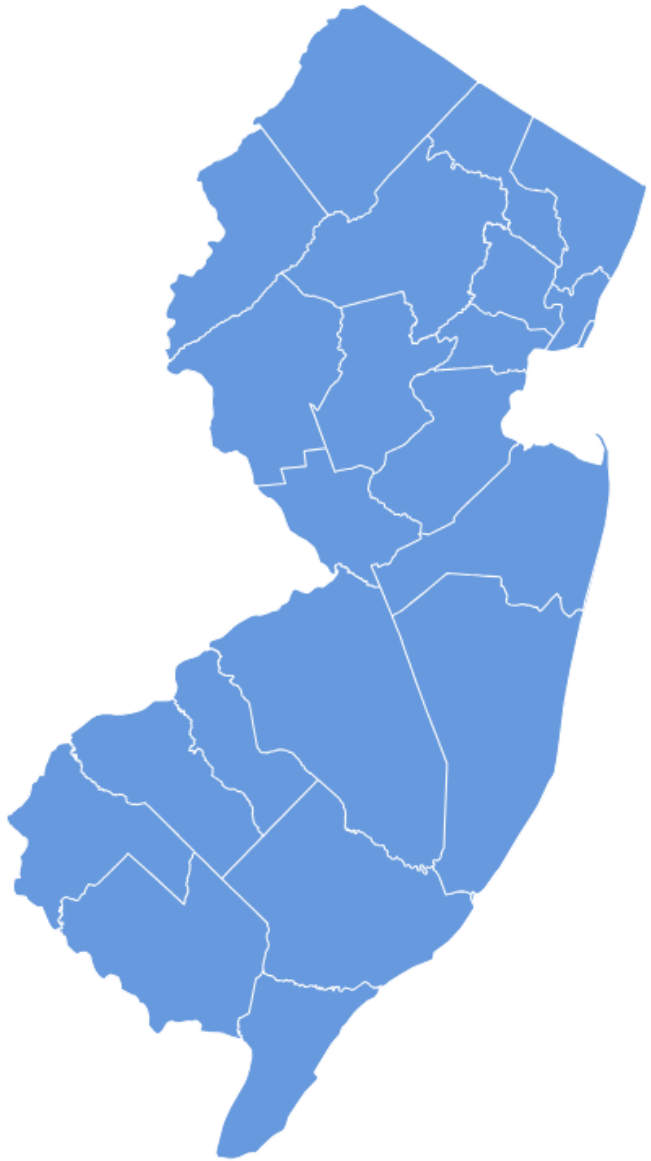
The State Facilities Initiative (SFI)

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

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

Melissa Lott – LGEA Account Manager
MLott@trccompanies.com
(732) 589-7397

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

THANK YOU