LGEA Presentation

Borough of Gibbsboro

November 5, 2024

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

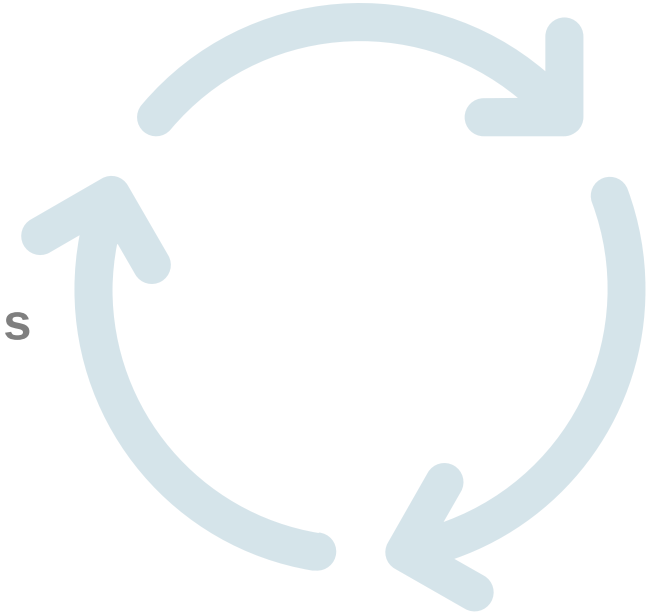
- *Borough of Gibbsboro*
  - Ed Campbell – Mayor
  - Amy Troxel – Borough Clerk
  - Shawn Seroka – Borough Engineer
- *NJ Clean Energy Program*
  - Sarah Walters – LGEA Project Manager
  - Moussa Traore – LGEA Technical Manager
  - Christopher Nolan – LGEA Project Auditor
  - Melissa Lott – LGEA Account Manager
- *Utility Energy Efficiency Programs*
  - Alex Haver - ACE
  - Kimberley Byk – South Jersey Gas

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 Borough of Gibbsboro

LGEA Process

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



Site Visit & Utility Analysis

Overview of Systems, Baseline & Existing Conditions:

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

Utility Consumption:

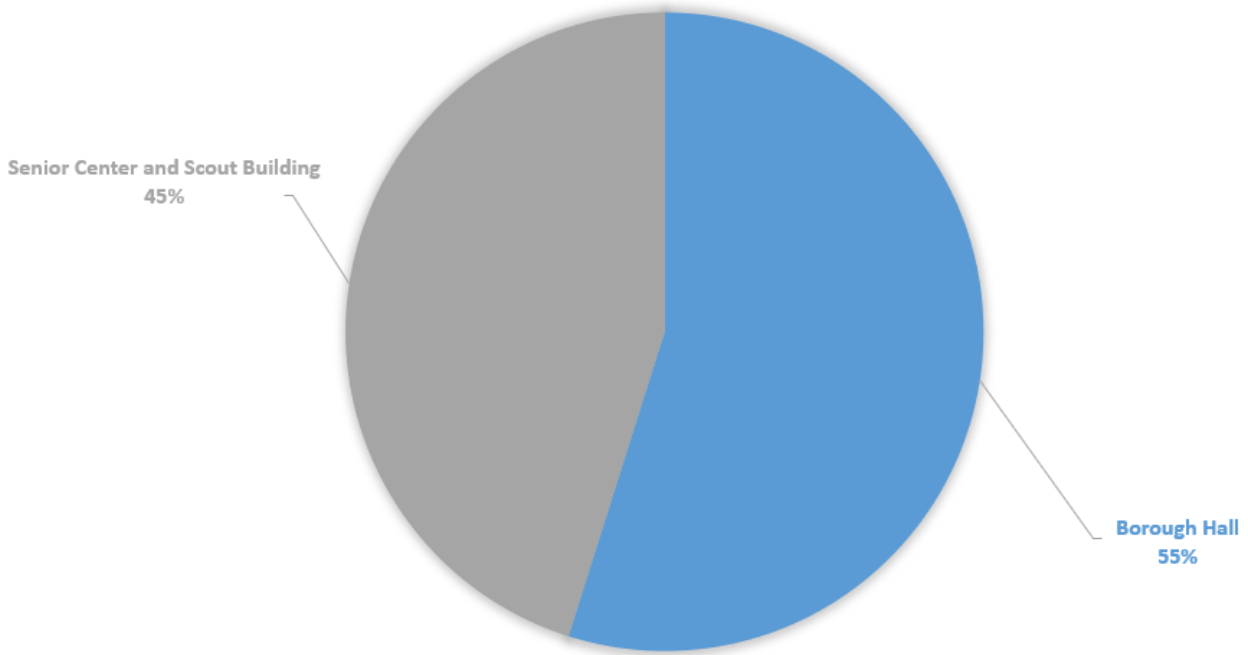
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

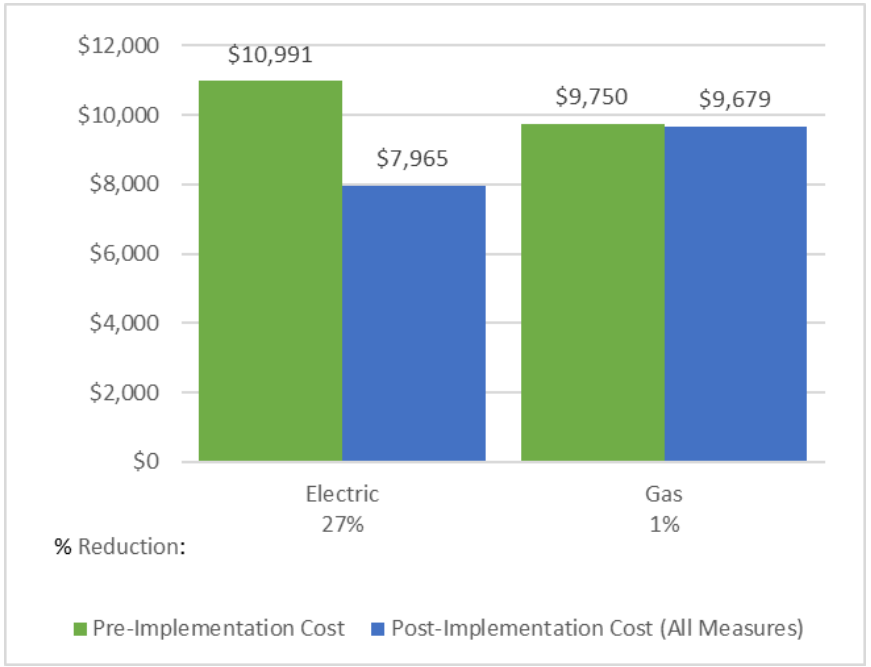
- Borough Hall
- Senior Center
- Scout Building

Utility Breakout

Percent of Total Annual Energy Costs

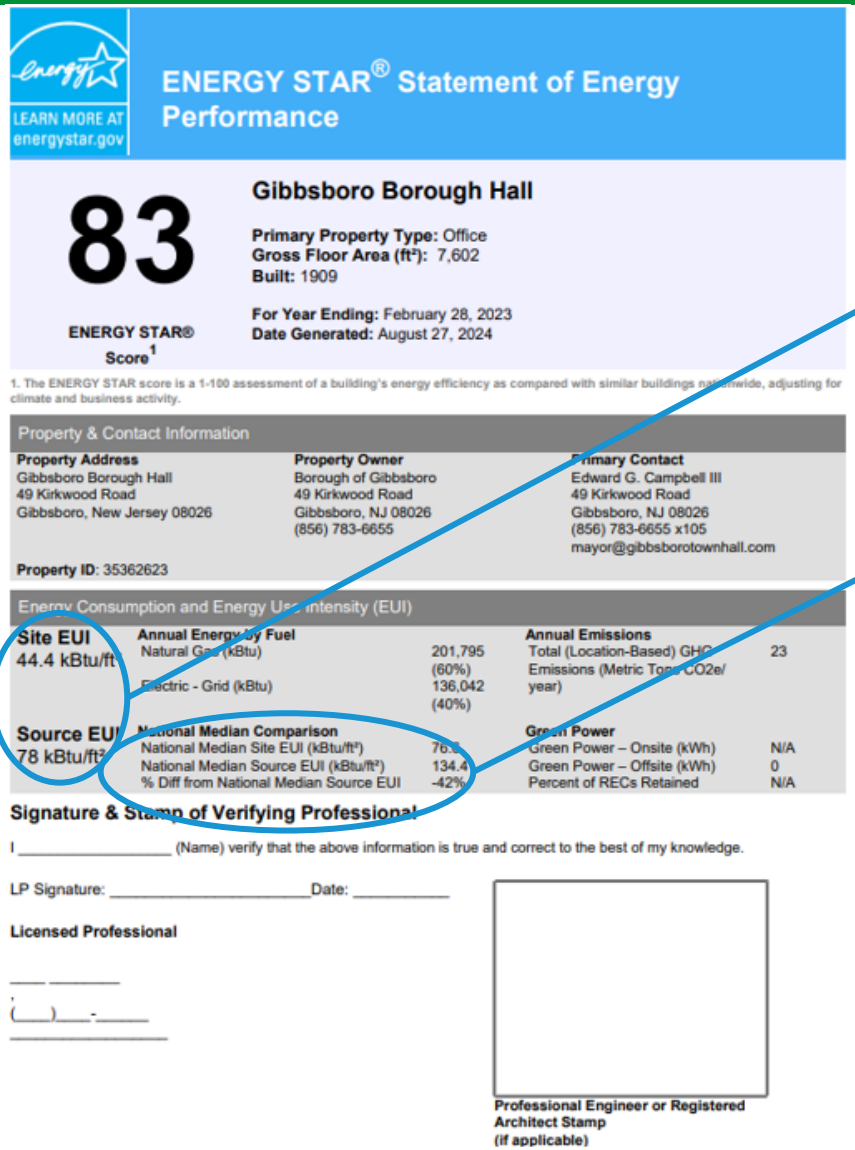


Pre & Post Implementation Cost



New Jersey's cleanenergy program™

BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

83

ENERGY STAR® Score[1]

Gibbsboro Borough Hall

Primary Property Type: Office
Gross Floor Area (ft²): 7,602
Built: 1909

For Year Ending: February 28, 2023
Date Generated: August 27, 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
Gibbsboro Borough Hall 49 Kirkwood Road Gibbsboro, New Jersey 08026	Borough of Gibbsboro 49 Kirkwood Road Gibbsboro, NJ 08026 (856) 783-6655	Edward G. Campbell III 49 Kirkwood Road Gibbsboro, NJ 08026 (856) 783-6655 x105 mayor@gibbsborotownhall.com

Property ID: 35362623

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
44.4 kBtu/ft²

Source EUI
78 kBtu/ft²

Annual Energy by Fuel		Annual Emissions	
Natural Gas (kBtu)	201,795 (60%)	Total (Location-Based) GHG Emissions (Metric Tons CO2e/year)	23
Electric - Grid (kBtu)	136,042 (40%)		

National Median Comparison		Green Power	
National Median Site EUI (kBtu/ft²)	76.6	Green Power – Onsite (kWh)	N/A
National Median Source EUI (kBtu/ft²)	134.4	Green Power – Offsite (kWh)	0
% Diff from National Median Source EUI	-42%	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
44.4 kBtu/ft²

Source EUI
78 kBtu/ft²

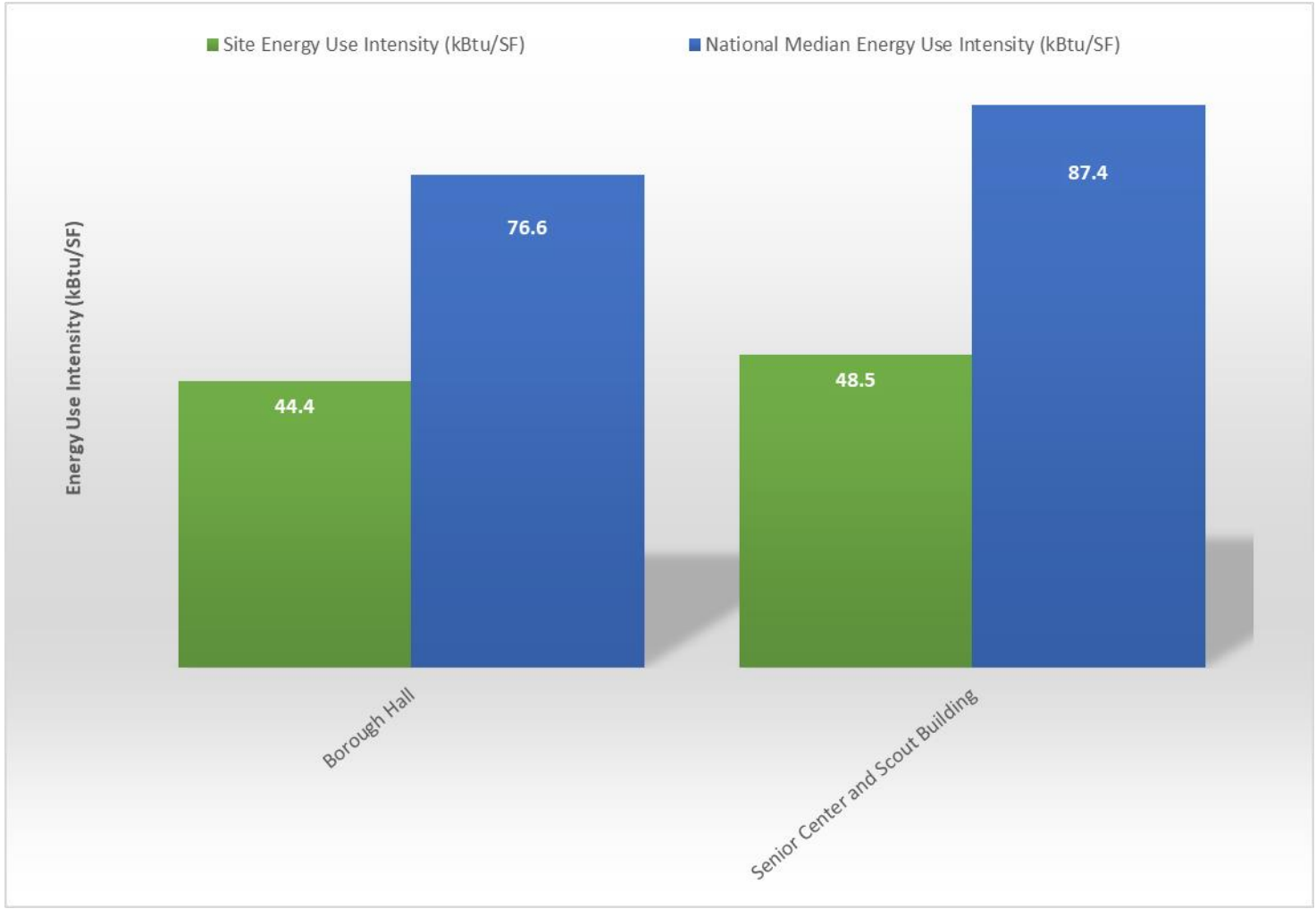
National Median Comparison

National Median Site EUI (kBtu/ft²)	76.6
National Median Source EUI (kBtu/ft²)	134.4
% Diff from National Median Source EUI	-42%

Site Name	ENERGY STAR® Score
Borough Hall	83
Senior Center & Scout Building	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.

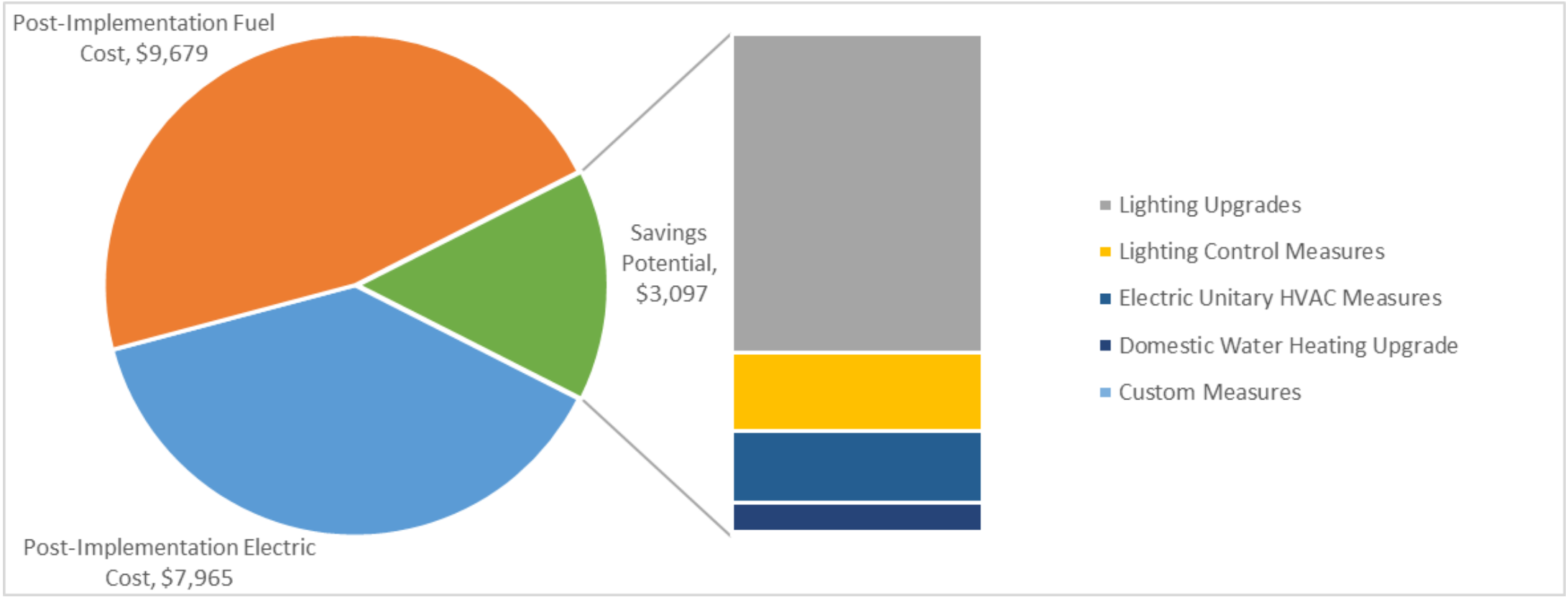
BENCHMARKING



New Jersey's cleanenergy program™

All Opportunities

Savings Potential



ALL OPPORTUNITIES

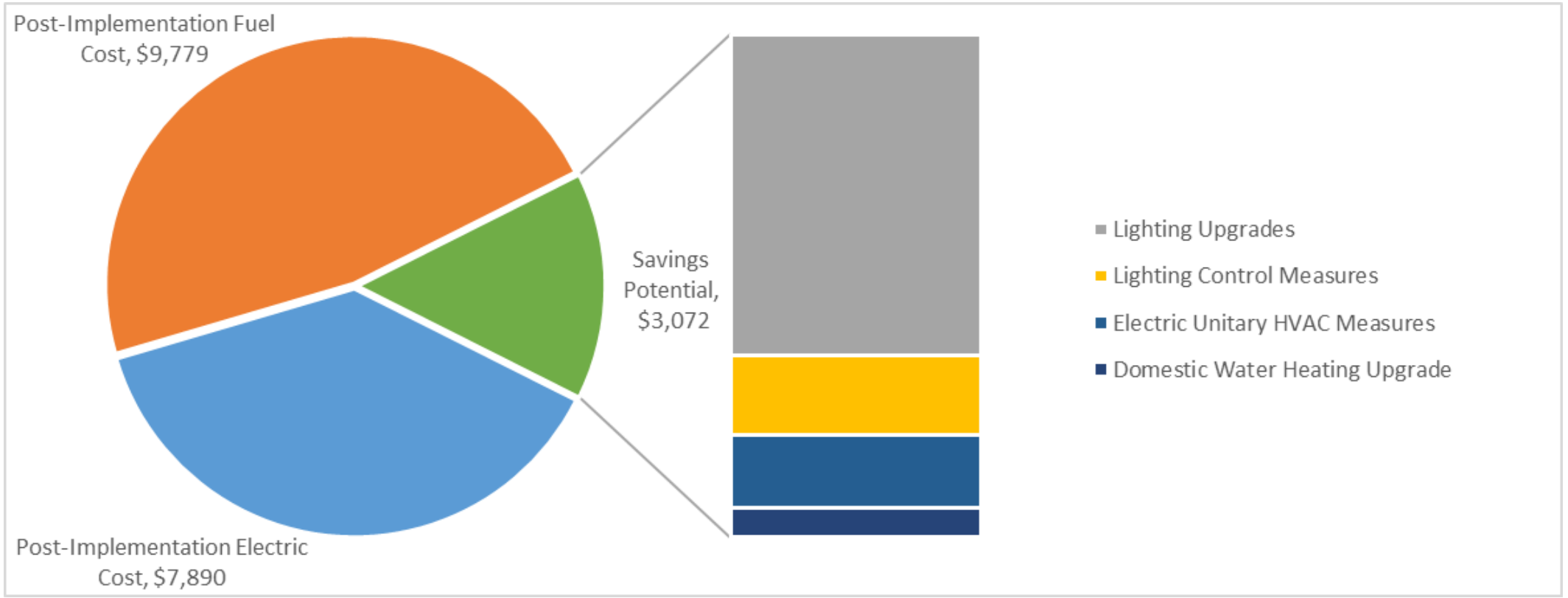
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings ($)	Estimated M&L Cost ($)	Estimated Incentive ($)*	Estimated Net M&L Cost ($)	Simple Payback Period (yrs)**	CO_2e Emissions Reduction (lbs)
Lighting Upgrades		**10,881**	**5.7**	**-2.0**	**$1,961**	**$11,330**	**$1,430**	**$9,900**	**5.0**	**10,728**
ECM 1	Install LED Fixtures	613	0.0	0.0	$107	$250	$10	$240	2.2	617
ECM 2	Retrofit Fixtures with LED Lamps	10,268	5.7	-2.0	$1,853	$11,080	$1,420	$9,660	5.2	10,110
Lighting Control Measures		**2,692**	**1.6**	**-0.6**	**$485**	**$5,420**	**$1,100**	**$4,320**	**8.9**	**2,645**
ECM 3	Install Occupancy Sensor Lighting Controls	2,101	1.5	-0.4	$377	$4,580	$680	$3,900	10.3	2,064
ECM 4	Install High/Low Lighting Controls	591	0.1	-0.1	$107	$840	$420	$420	3.9	581
Unitary HVAC Measures		**2,411**	**2.4**	**0.0**	**$447**	**$8,600**	**$500**	**$8,100**	**18.1**	**2,428**
ECM 5	Install High Efficiency Air Conditioning Units	2,411	2.4	0.0	$447	$8,600	$500	$8,100	18.1	2,428
Domestic Water Heating Upgrade		**850**	**0.0**	**1.1**	**$179**	**$120**	**$20**	**$100**	**0.6**	**981**
ECM 6	Install Low-Flow DHW Devices	850	0.0	1.1	$179	$120	$20	$100	0.6	981
Custom Measures		**-431**	**0.0**	**5.0**	**$25**	**$2,500**	**$0**	**$2,500**	**100.0**	**151**
ECM 7	Replace Gas Fired Water Heater with Heat Pump Water Heater	-431	0.0	5.0	$25	$2,500	$0	$2,500	100.0	151
TOTALS (ALL MEASURES)		**16,403**	**9.7**	**3.5**	**$3,097**	**$27,970**	**$3,050**	**$24,920**	**8.0**	**16,933**

* - 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).

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		**10,881**	**5.7**	**-2.0**	**$1,961**	**$11,330**	**$1,430**	**$9,900**	**5.0**	**10,728**
ECM 1	Install LED Fixtures	613	0.0	0.0	$107	$250	$10	$240	2.2	617
ECM 2	Retrofit Fixtures with LED Lamps	10,268	5.7	-2.0	$1,853	$11,080	$1,420	$9,660	5.2	10,110
Lighting Control Measures		**2,692**	**1.6**	**-0.6**	**$485**	**$5,420**	**$1,100**	**$4,320**	**8.9**	**2,645**
ECM 3	Install Occupancy Sensor Lighting Controls	2,101	1.5	-0.4	$377	$4,580	$680	$3,900	10.3	2,064
ECM 4	Install High/Low Lighting Controls	591	0.1	-0.1	$107	$840	$420	$420	3.9	581
Unitary HVAC Measures		**2,411**	**2.4**	**0.0**	**$447**	**$8,600**	**$500**	**$8,100**	**18.1**	**2,428**
ECM 5	Install High Efficiency Air Conditioning Units	2,411	2.4	0.0	$447	$8,600	$500	$8,100	18.1	2,428
Domestic Water Heating Upgrade		**850**	**0.0**	**1.1**	**$179**	**$120**	**$20**	**$100**	**0.6**	**981**
ECM 6	Install Low-Flow DHW Devices	850	0.0	1.1	$179	$120	$20	$100	0.6	981
TOTALS		**16,834**	**9.7**	**-1.5**	**$3,072**	**$25,470**	**$3,050**	**$22,420**	**7.3**	**16,781**

* - 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).

BOROUGH HALL

#	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			**8,874**	**4.1**	**-2**	**$1,614**	**$8,240**	**$820**	**$7,420**	**4.6**	**8,739**
ECM 1	Retrofit Fixtures with LED Lamps	Yes	8,874	4.1	-2	$1,614	$8,240	$820	$7,420	4.6	8,739
Lighting Control Measures			**2,302**	**1.1**	**0**	**$418**	**$4,460**	**$990**	**$3,470**	**8.3**	**2,262**
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	1,711	1.0	0	$311	$3,620	$570	$3,050	9.8	1,681
ECM 3	Install High/Low Lighting Controls	Yes	591	0.1	0	$107	$840	$420	$420	3.9	581
Unitary HVAC Measures			**2,411**	**2.4**	**0**	**$447**	**$8,600**	**$500**	**$8,100**	**18.1**	**2,428**
ECM 4	Install High Efficiency Air Conditioning Units	Yes	2,411	2.4	0	$447	$8,600	$500	$8,100	18.1	2,428
Domestic Water Heating Upgrade			**850**	**0.0**	**0**	**$158**	**$60**	**$20**	**$40**	**0.3**	**856**
ECM 5	Install Low-Flow DHW Devices	Yes	850	0.0	0	$158	$60	$20	$40	0.3	856
TOTALS (COST EFFECTIVE MEASURES)			**14,438**	**7.7**	**-2**	**$2,637**	**$21,360**	**$2,330**	**$19,030**	**7.2**	**14,285**
TOTALS (ALL MEASURES)			**14,438**	**7.7**	**-2**	**$2,637**	**$21,360**	**$2,330**	**$19,030**	**7.2**	**14,285**

* - 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).

SENIOR CENTER & SCOUT 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			**2,007**	**1.5**	**0**	**$346**	**$3,090**	**$610**	**$2,480**	**7.2**	**1,989**
ECM 1	Install LED Fixtures	Yes	613	0.0	0	$107	$250	$10	$240	2.2	617
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,393	1.5	0	$239	$2,840	$600	$2,240	9.4	1,372
Lighting Control Measures			**390**	**0.5**	**0**	**$67**	**$960**	**$110**	**$850**	**12.7**	**383**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	390	0.5	0	$67	$960	$110	$850	12.7	383
Domestic Water Heating Upgrade			**0**	**0.0**	**2**	**$21**	**$60**	**$0**	**$60**	**2.8**	**124**
ECM 4	Install Low-Flow DHW Devices	Yes	0	0.0	2	$21	$60	$0	$60	2.8	124
Custom Measures			**-431**	**0.0**	**5**	**$25**	**$2,500**	**$0**	**$2,500**	**100.0**	**151**
ECM 5	Replace Gas Fired Water Heater with Heat Pump Water Heater	No	-431	0.0	5	$25	$2,500	$0	$2,500	100.0	151
TOTALS (COST EFFECTIVE MEASURES)			**2,397**	**2.0**	**1**	**$434**	**$4,110**	**$720**	**$3,390**	**7.8**	**2,496**
TOTALS (ALL MEASURES)			**1,966**	**2.0**	**6**	**$459**	**$6,610**	**$720**	**$5,890**	**12.8**	**2,648**

* - 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

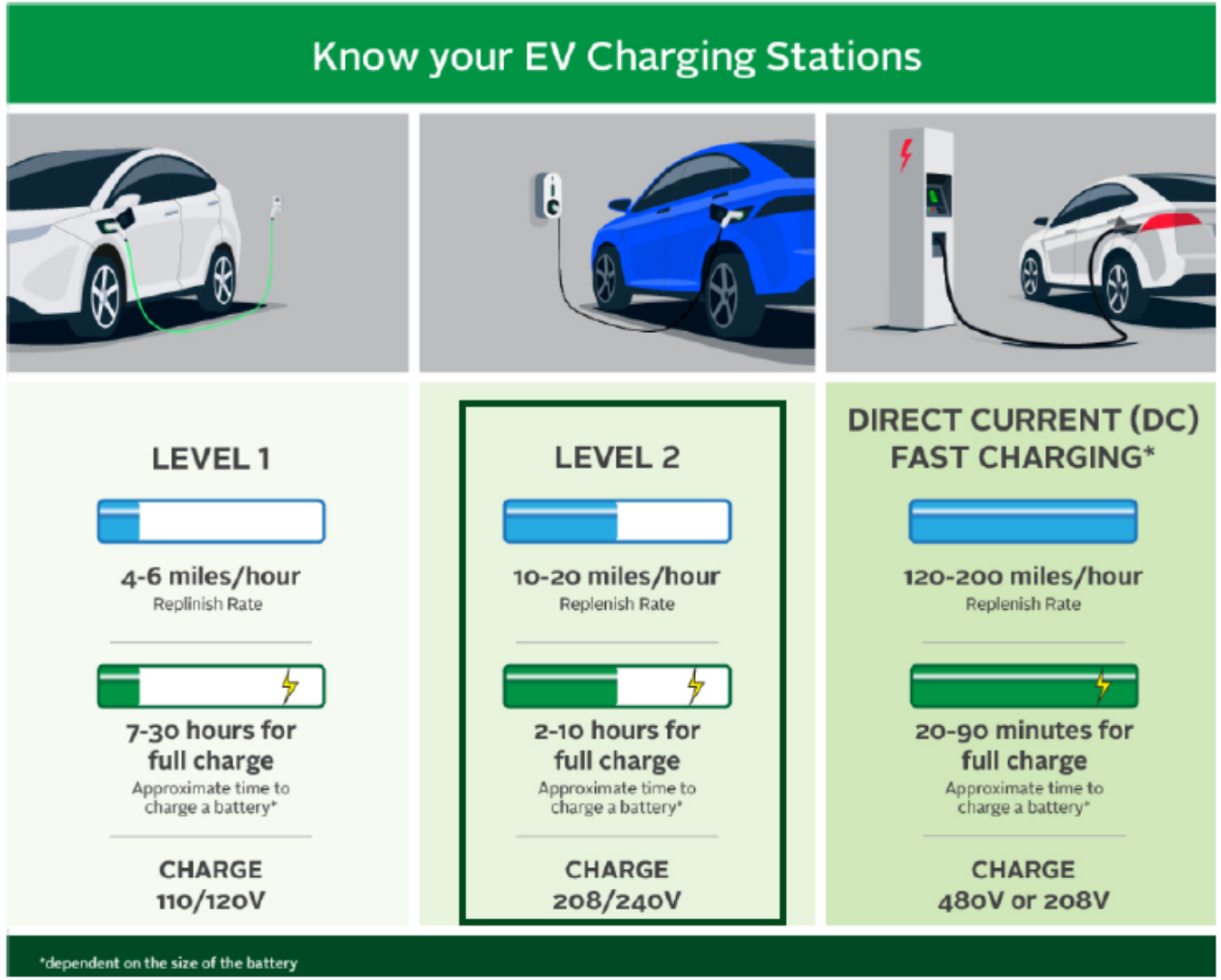
BPU New Jersey's cleanenergy program™

Measures for Future Consideration

- Installation of an Energy Management System
- Install Building Insulation
- Upgrade to a Heat Pump System
- Window Replacements

EV Charging Station Potential

NJCleanEnergy.com/EV



	Borough of Gibbsboro
Potential:	**Medium / High**

FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

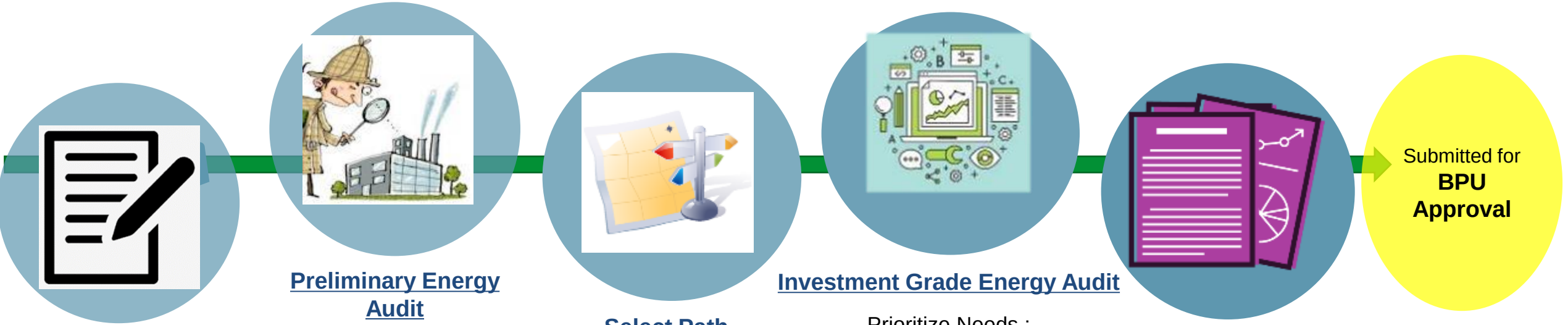
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- 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

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SUSTAINABLE JERSEY – DIRECT PAY

Combining NJBPU Incentives with Direct Pay

Direct Pay (Elective Pay), part of Inflation Reduction Act (IRA), allows tax-exempt entities, including municipalities and school districts, to receive tax credits for clean energy projects.

About Direct Pay

- All eligible projects receive tax credits (not competitive)
- Currently authorized for 10 years
- Projects completed in 2023 are eligible for tax credits until Nov 15
  For local governments filing on a calendar year, fiscal year deadline is May 15

Eligible Projects Include

- Renewables – solar, geothermal, wind, etc.
- Electric vehicles
- Electric vehicle charging infrastructure *(limited)*
- Combined heat and power; Electric storage

Direct Pay can be used in combination with other funding sources like NJBPU incentives.

Example

Lightweight EV	$24,000
NJBPU Clean Fleet Grant	-$4,000
Direct Pay Tax Credit	-$7,500
Total cost to entity	**$12,500**

Note: Total incentive can not exceed total project cost.

Full list of Direct Pay eligible tax credits at https://www.irs.gov/pub/irs-pdf/p5817a.pdf

For more information, visit Sustainable Jersey's Direct Pay Tax Credits page.

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

ACE

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Alex Haver – AHaver@trccompanies.com

South Jersey Gas

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THANK YOU