



LGEA Presentation

Delaware Township BOE

January 11, 2023



New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

- *Delaware Twp BOE*

- Mary Lyons
- Heather Opdyke
- Jeff Munsey
- Jes Stahl
- Susan Joyce
- Adam Pate

- *NJ Clean Energy Program*

- Sarah Walters – LGEA Project Manager
- Moussa Traore – LGEA Lead Auditor
- Ryan Knippenberg – LGEA Project Auditor

- *Utility Energy Efficiency Programs*

- Sirajuddin Shaikh – JCP&L

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 Delaware Township BOE

LGEA PROCESS

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



DELAWARE TOWNSHIP SCHOOL & GARAGE

Overview of Systems, Baseline & Existing Conditions:

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

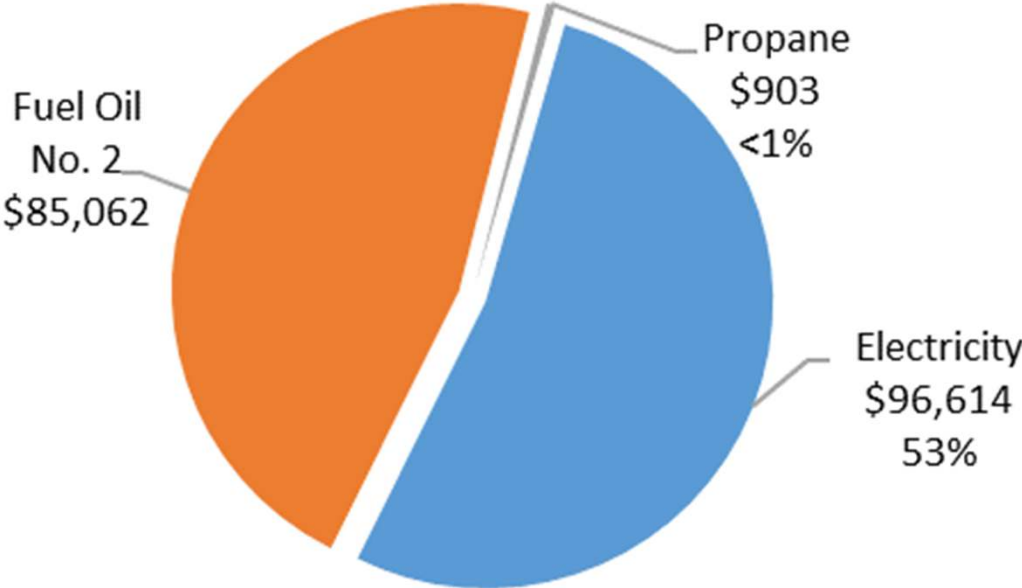
Utility Consumption:

- Electric Consumption and Costs
- Fuel Oil Consumption and Costs
- Propane Consumption and Costs

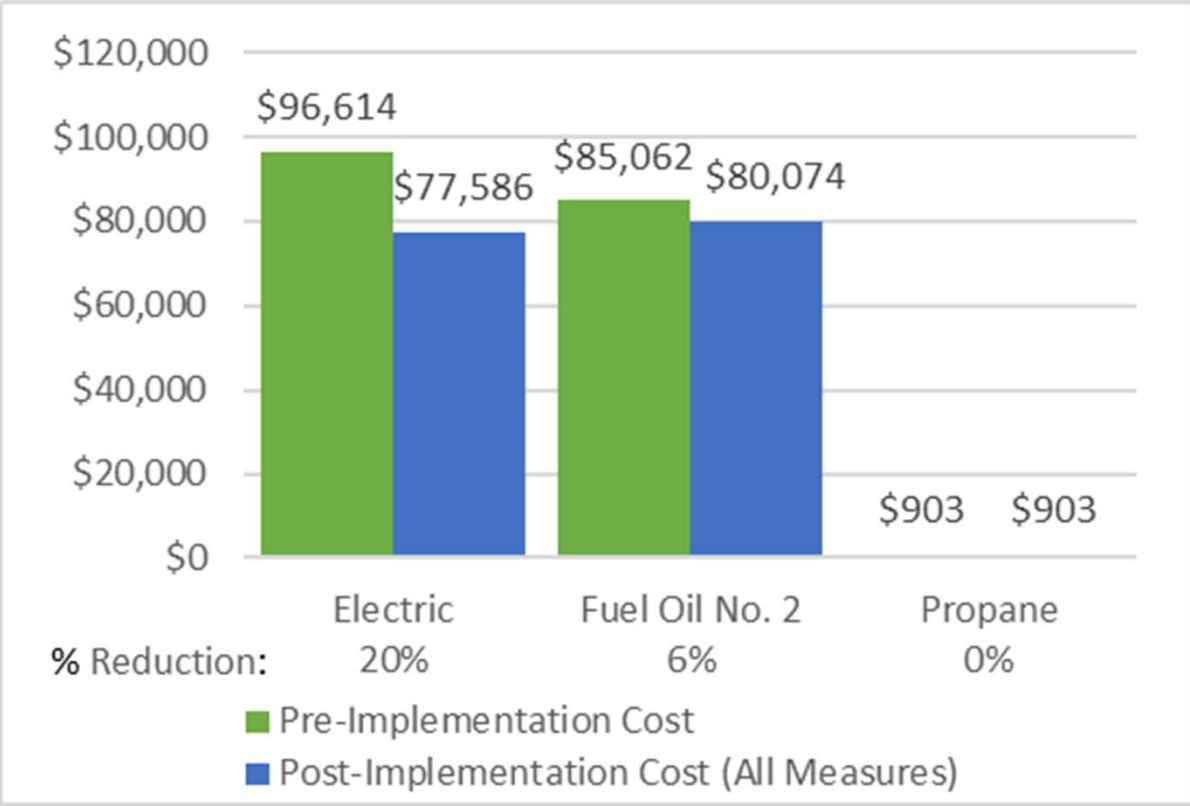


UTILITY BREAKOUT

Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

ENERGY STAR® Statement of Energy Performance

32
ENERGY STAR® Score¹

Delaware Township School (campus)
Primary Property Type: K-12 School
Gross Floor Area (ft²): 106,176
Built: 1950
For Year Ending: April 30, 2022
Date Generated: September 20, 2022

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 Delaware Township School (campus) 501 Rosemont-Ringoos Road Sergeantsville, New Jersey 08557	Property Owner Delaware Township School District 501 Rosemont-Ringoos Road Sergeantsville, NJ 08557 (908) 240-2623	Primary Contact Jeffrey Munsey 501 Rosemont-Ringoos Road Sergeantsville, NJ 08557 (908) 240-2623 jmunsey@dtsk8nj.org
Property ID: 22770835		

Energy Consumption and Energy Use Intensity (EUI)		
Site EUI 69.5 kBtu/ft²	Annual Energy by Fuel	National Median Comparison
	Electric - Grid (kBtu) 2,876,020 (39%)	National Median Site EUI (kBtu/ft²) 58.4
	Fuel Oil (No. 2) (kBtu) 4,472,221 (61%)	National Median Source EUI (kBtu/ft²) 99.8
	Propane (kBtu) 33,681 (0%)	% Diff from National Median Source EUI 19%
Source EUI 118.7 kBtu/ft²	Annual Emissions	
	Greenhouse Gas Emissions (Metric Tons CO2e/year) 585	

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

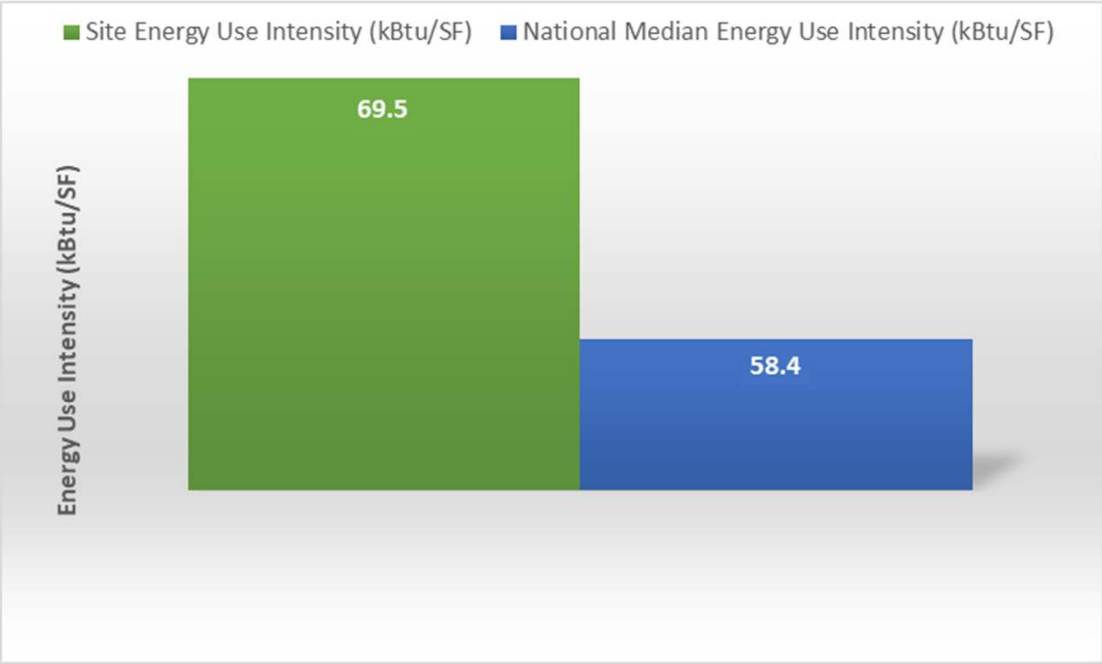
LP Signature: _____ Date: _____

Licensed Professional

Professional Engineer or Registered Architect Stamp (if applicable)

Site EUI
69.5 kBtu/ft²

Source EUI
118.7 kBtu/ft²



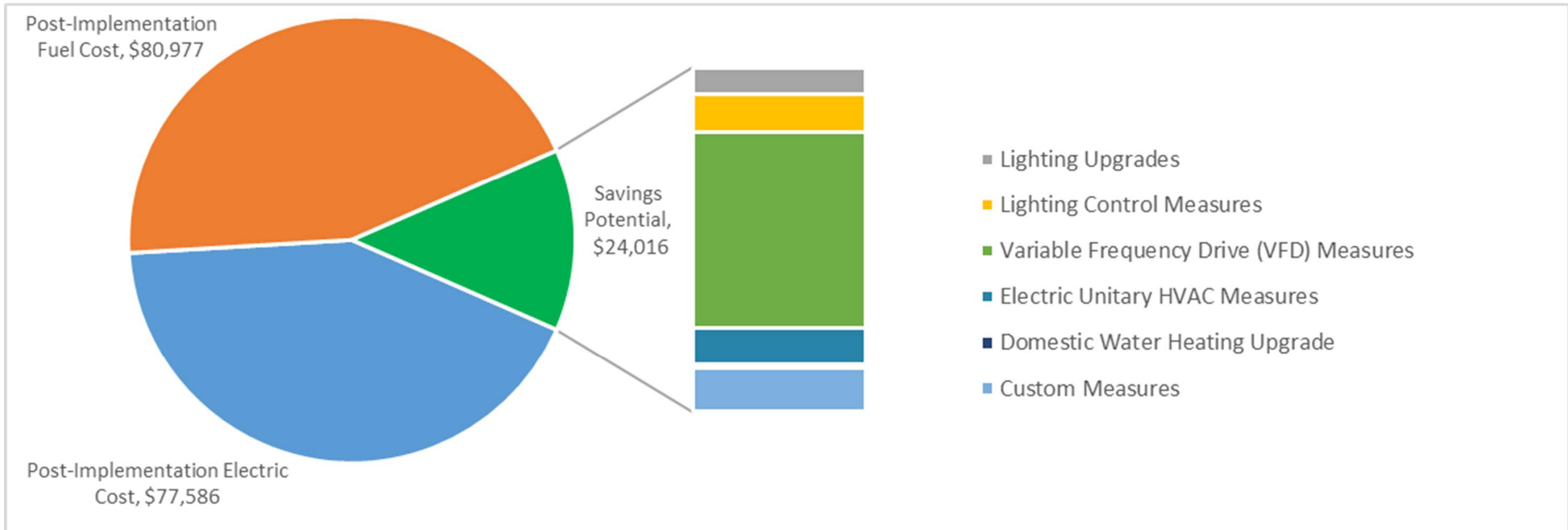
National Median Comparison

National Median Site EUI (kBtu/ft²)	58.4
National Median Source EUI (kBtu/ft²)	99.8
% Diff from National Median Source EUI	19%

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



DELAWARE TWP SCHOOL & GARAGE

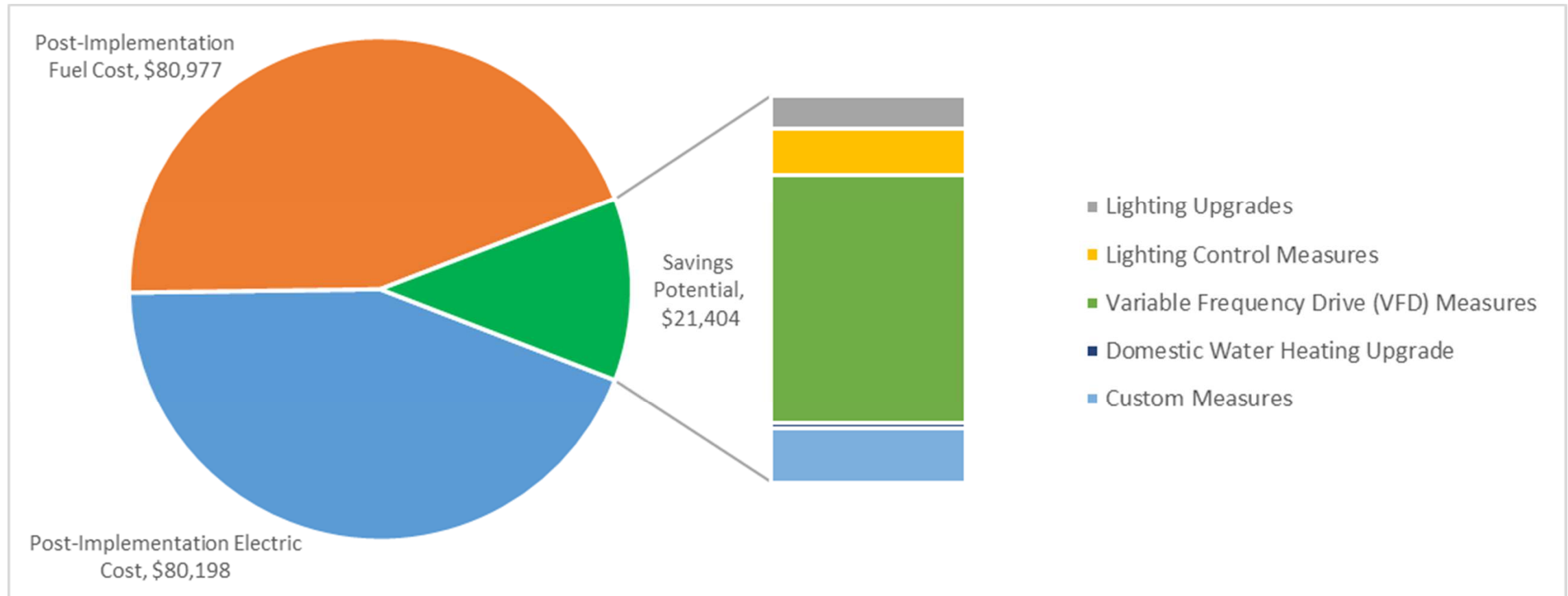
#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			17,101	4.8	-7	\$1,817	\$9,672	\$2,086	\$7,586	4.2	16,127
ECM 1	Retrofit Fixtures with LED Lamps	Yes	17,101	4.8	-7	\$1,817	\$9,672	\$2,086	\$7,586	4.2	16,127
Lighting Control Measures			24,744	7.9	-10	\$2,616	\$31,871	\$7,590	\$24,281	9.3	23,224
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	20,104	6.7	-8	\$2,126	\$25,114	\$3,075	\$22,039	10.4	18,869
ECM 3	Install High/Low Lighting Controls	Yes	4,640	1.1	-2	\$491	\$6,757	\$4,515	\$2,242	4.6	4,355
Variable Frequency Drive (VFD) Measures			120,387	17.1	0	\$13,684	\$53,342	\$6,800	\$46,542	3.4	121,229
ECM 4	Install VFDs on Constant Volume (CV) Fans	Yes	120,387	17.1	0	\$13,684	\$53,342	\$6,800	\$46,542	3.4	121,229
Unitary HVAC Measures			22,977	21.2	0	\$2,612	\$182,507	\$9,900	\$172,607	66.1	23,138
ECM 5	Install High Efficiency Air Conditioning Units	No	22,977	21.2	0	\$2,612	\$182,507	\$9,900	\$172,607	66.1	23,138
Domestic Water Heating Upgrade			2,265	0.0	0	\$257	\$151	\$58	\$93	0.4	2,281
ECM 6	Install Low-Flow DHW Devices	Yes	2,265	0.0	0	\$257	\$151	\$58	\$93	0.4	2,281
Custom Measures			-20,105	0.0	280	\$3,029	\$6,051	\$0	\$6,051	2.0	25,564
ECM 7	Replace Electric Water Heater with Heat Pump Water Heater	Yes	6,155	0.0	0	\$700	\$2,383	\$0	\$2,383	3.4	6,198
ECM 8	Replace Oil Fired Water Heater with Heat Pump Water Heater	Yes	-26,260	0.0	280	\$2,329	\$3,668	\$0	\$3,668	1.6	19,366
TOTALS (COST EFFECTIVE MEASURES)			144,392	29.8	263	\$21,404	\$101,087	\$16,534	\$84,553	4.0	188,424
TOTALS (ALL MEASURES)			167,369	51.0	263	\$24,016	\$283,594	\$26,434	\$257,160	10.7	211,562

* - 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



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 practices by building

MEASURES FOR FUTURE CONSIDERATION

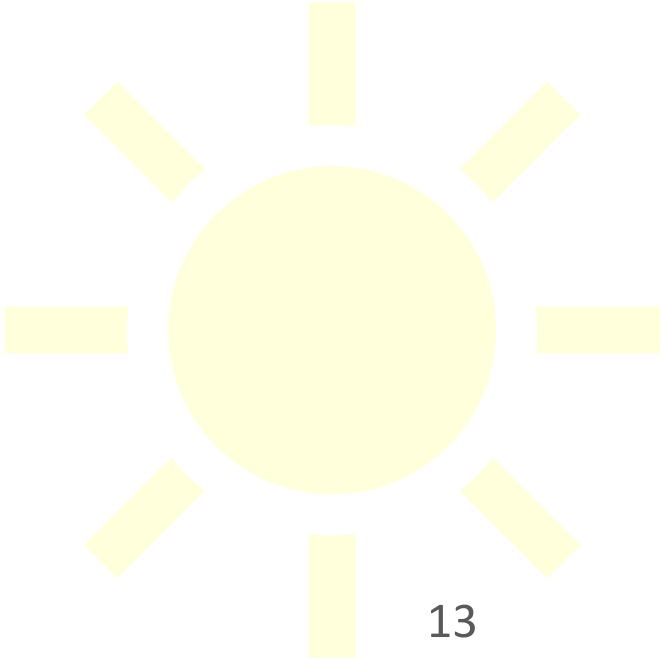
- Upgrade to a Heat Pump System
- Window Replacements
- Replace Smooth V-Belts with Notched or Synchronous Belts
- *Oil to Propane Conversion



SOLAR ENERGY GENERATION POTENTIAL

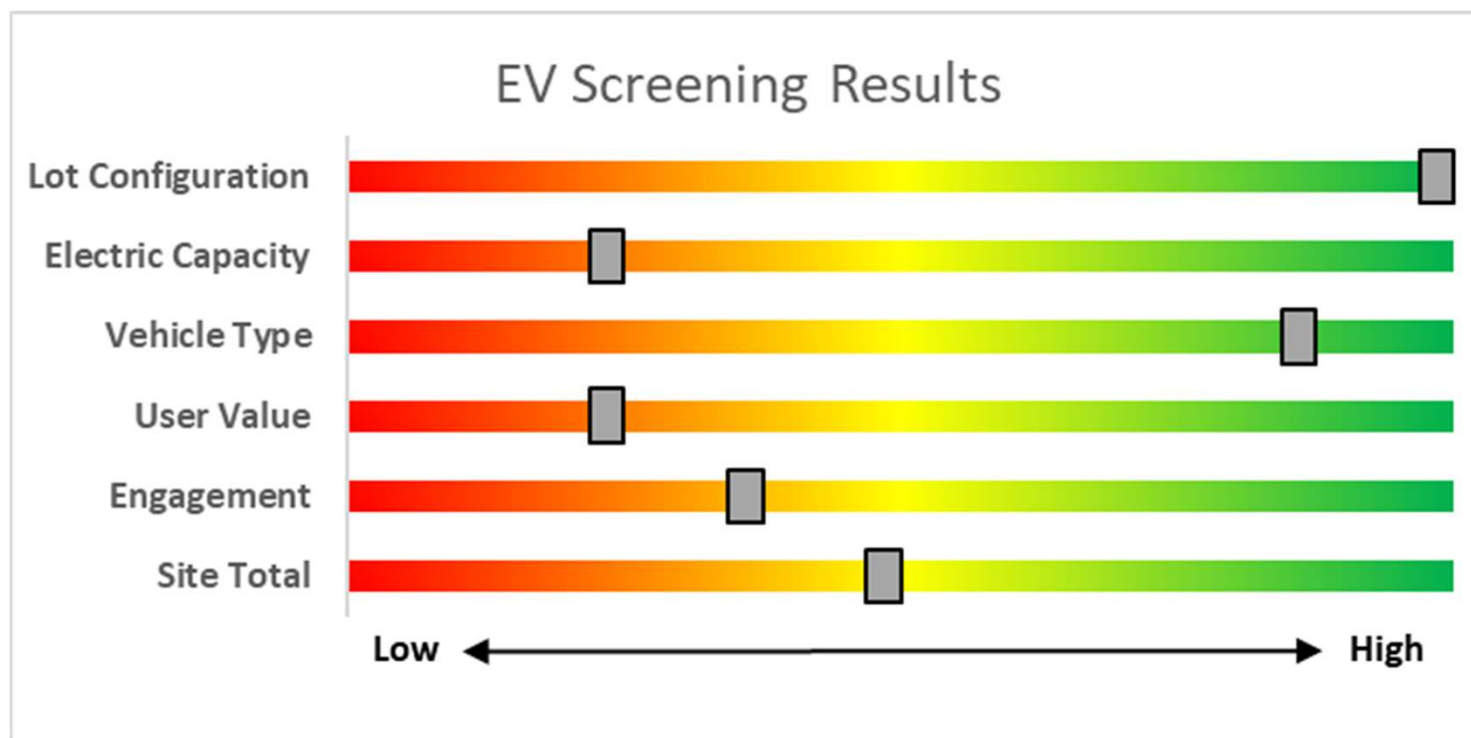
NJCleanEnergy.com/renewable-energy

	Delaware Township School
<i>Potential:</i>	HIGH
<i>System Potential: (kW)</i>	228
<i>Electric Generation: (kWh per year)</i>	271,633
<i>Displaced Cost: (per year)</i>	\$30,880



EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV



	Delaware Township School
Potential:	Medium

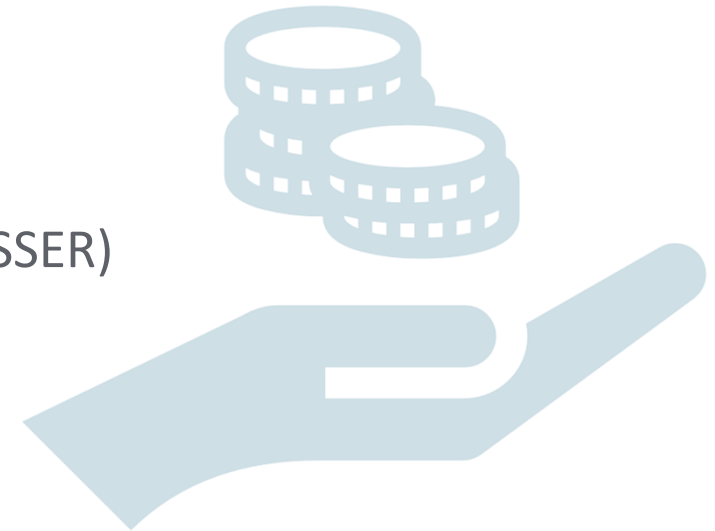


FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

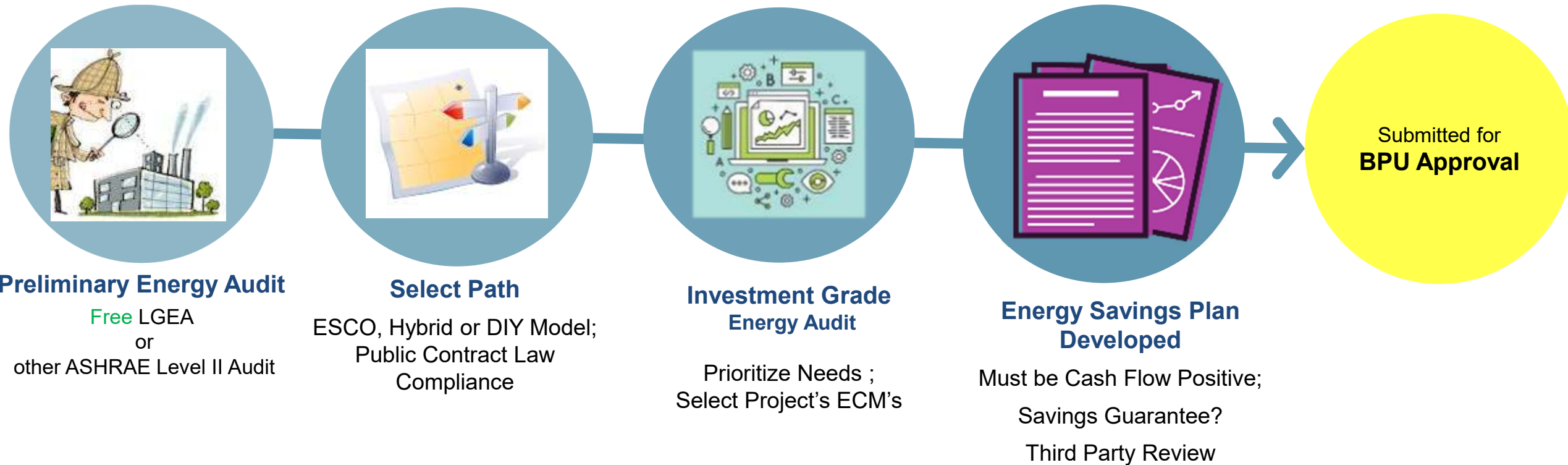
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting = NJ ESIP
- 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
- 15 or 20 year pay back; self funding
- NJBPU Approved Incentive Programs
 - Utility or NJCEP
- Can be combined with Federal/State Pandemic Relief Funds (ESSER)
- 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

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c: 609.915.0903

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

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



UTILITY RUN ENERGY EFFICIENCY PROGRAMS

JCP&L

Sirajuddin Shaikh - sirshaikh@firstenergycorp.com

SCHOOL & SMALL BUSINESS ENERGY EFFICIENCY STIMULUS PROGRAM

NJCleanEnergy.com/SSBEE

ABOUT

Provides grants to ensure facilities have functional HVAC systems that are tested, adjusted, and, if necessary or cost effective, repaired, upgraded or replaced to improve performance. (SSB-VEEVR)

Provides grants to replace noncompliant plumbing fixtures and appliances that fail to meet water efficiency standards. (SSB-NPFA)

REQUIREMENTS

Assessment verified by a Certified Energy Auditor or TAB Technician and proof of noncompliant equipment.

INCENTIVE CAP

Grants shall provide no more than 75% of the approved project cost up to \$5 million.



FOR MORE INFORMATION

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THANK YOU

