

LGEA Presentation

East Amwell Township School

September 28, 2023



New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

- *East Amwell Township School*
 - Jesse Fry – Facility Manager
 - Ed Stoloski – Superintendent
 - Eric Bayliss – Account Executive
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Moussa Traore – LGEA Technical Manager
 - Melissa Lott – LGEA Account Manager
- *Utility Energy Efficiency Programs*
 - John Sousa– JCP&L
 - Kelly Rucko-Scaduto – 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 East Amwell Township School

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:

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

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

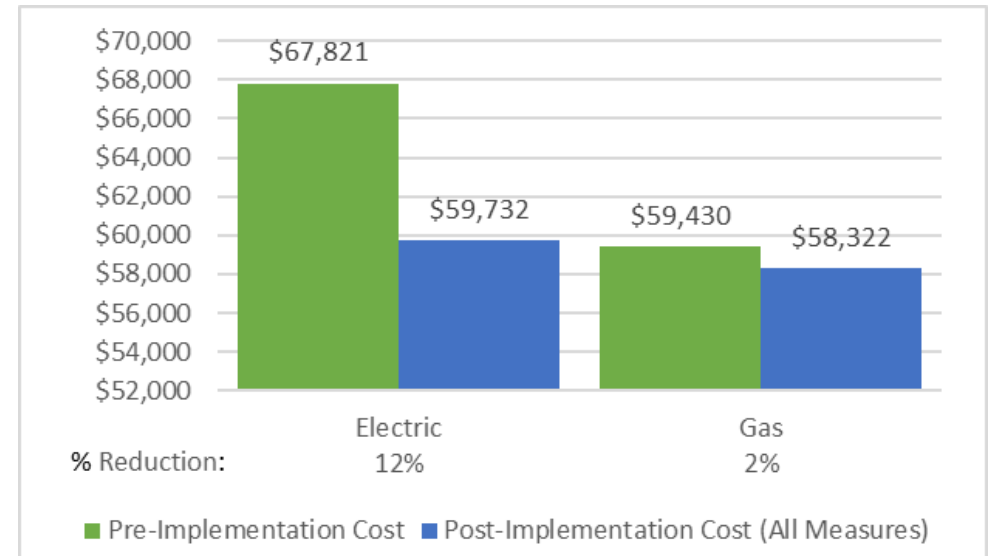
- East Amwell Township School
- Maintenance Barn

UTILITY BREAKOUT

Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

ENERGY STAR® Statement of Energy Performance

41 **East Amwell Township School (campus)**

Primary Property Type: K-12 School
Gross Floor Area (ft²): 83,200
Built: 1938

For Year Ending: March 31, 2023
Date Generated: August 03, 2023

ENERGY STAR® Score¹

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 East Amwell Township School (campus) 43 Wertsville Road Ringoes, New Jersey 08551	Property Owner East Amwell School District 43 Wertsville Road Ringoes, NJ 08551 (908) 782-6464	Primary Contact Jesse Fry 43 Wertsville Road Ringoes, NJ 08551 (908) 782-6464 x231 jfy@eastamwell.org
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Property ID: 26748010

Energy Consumption and Energy Use Intensity (EUI)

Site EUI 78.2 kBtu/ft²	Source EUI 121.8 kBtu/ft²	Annual Energy by Fuel Electricity Grid (kBtu) 1,887,790 (29%) Natural Gas (kBtu) 4,614,335 (71%)	National Median Comparison National Median Site EUI (kBtu/ft²) 71.8 National Median Source EUI (kBtu/ft²) 111.9 % Diff from National Median Source EUI 9%
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Annual Emissions
Total (Location-Based) GHG Emissions 410 (Metric Tons CO2e/year)

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

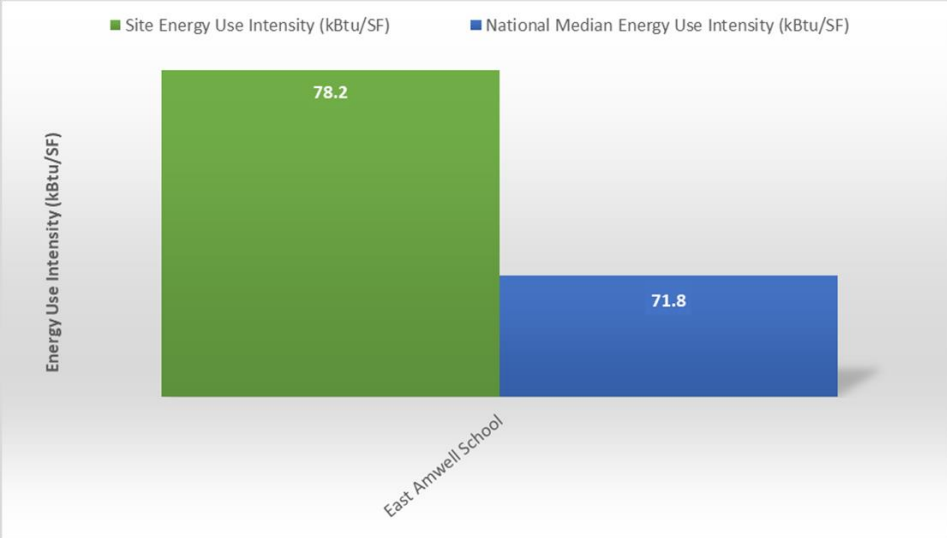
Professional Engineer or Registered Architect Stamp (if applicable)

Site EUI
78.2 kBtu/ft²

Source EUI
121.8 kBtu/ft²

National Median Comparison

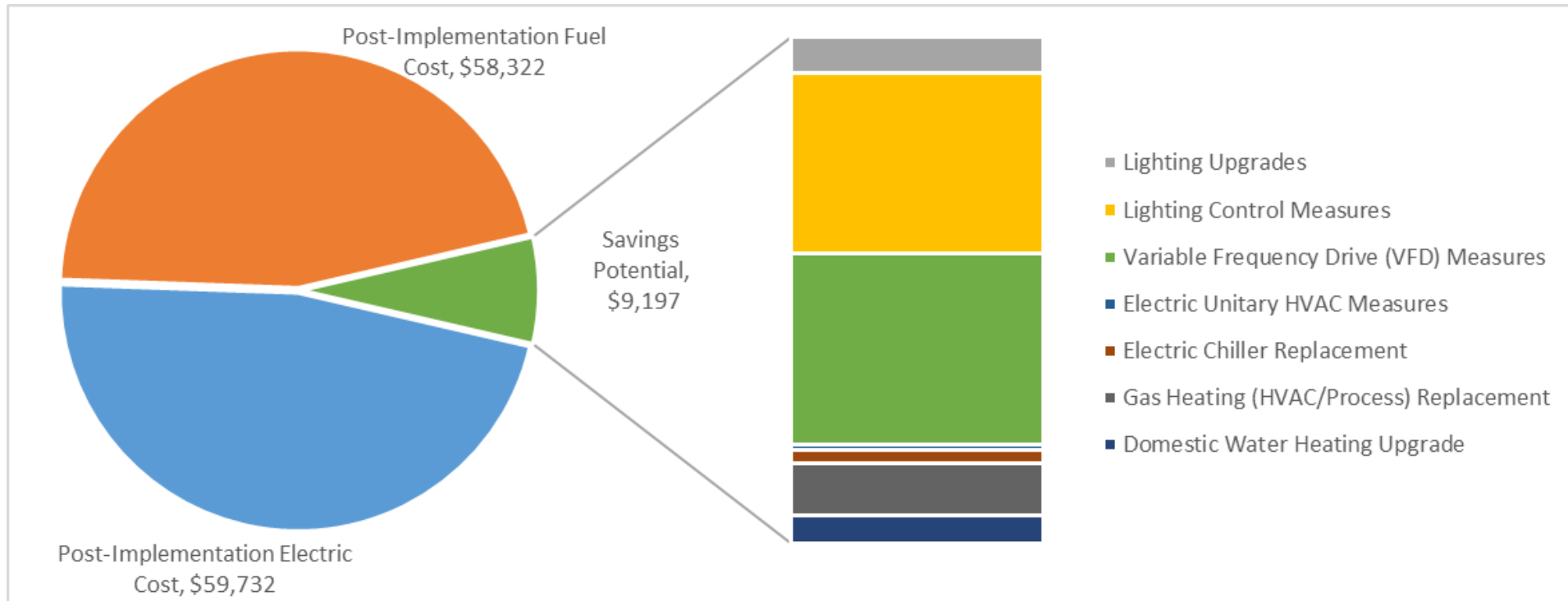
National Median Site EUI (kBtu/ft²)	71.8
National Median Source EUI (kBtu/ft²)	111.9
% Diff from National Median Source EUI	9%



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



EAST AMWELL TOWNSHIP SCHOOL

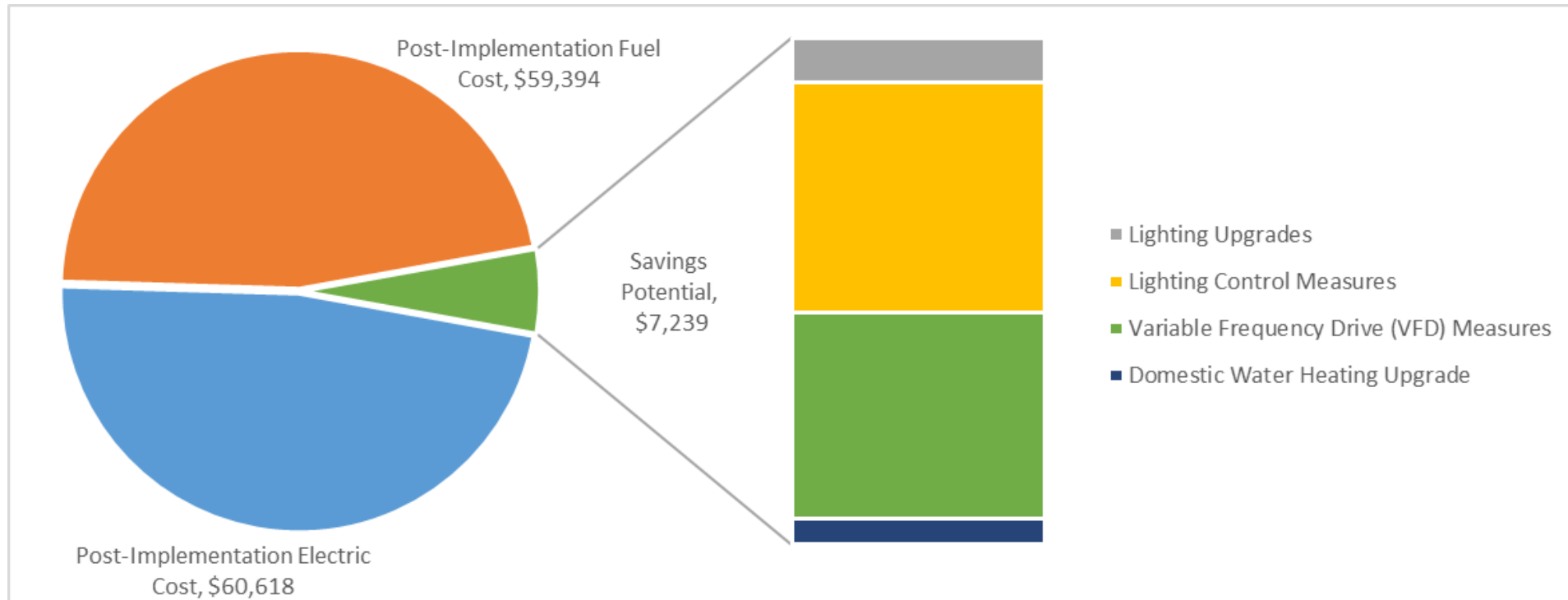
#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			5,071	0.9	-1	\$641	\$2,582	\$473	\$2,109	3.3	4,993
ECM 1	Install LED Fixtures	Yes	438	0.0	0	\$57	\$309	\$50	\$259	4.6	441
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	228	0.0	0	\$29	\$69	\$10	\$59	2.0	224
ECM 3	Retrofit Fixtures with LED Lamps	Yes	4,404	0.9	-1	\$556	\$2,204	\$413	\$1,791	3.2	4,327
Lighting Control Measures			25,972	4.8	-5	\$3,279	\$20,718	\$6,075	\$14,643	4.5	25,518
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	20,934	4.1	-4	\$2,643	\$15,318	\$1,980	\$13,338	5.0	20,568
ECM 5	Install High/Low Lighting Controls	Yes	5,038	0.8	-1	\$636	\$5,400	\$4,095	\$1,305	2.1	4,950
Variable Frequency Drive (VFD) Measures			27,089	7.4	0	\$3,495	\$42,084	\$5,200	\$36,884	10.6	27,278
ECM 6	Install VFDs on Constant Volume (CV) Fans	No	4,269	1.9	0	\$551	\$12,768	\$300	\$12,468	22.6	4,299
ECM 7	Install VFDs on Chilled Water Pumps	Yes	13,043	3.9	0	\$1,683	\$13,393	\$2,200	\$11,193	6.7	13,134
ECM 8	Install VFDs on Heating Water Pumps	Yes	9,777	1.5	0	\$1,262	\$15,922	\$2,700	\$13,222	10.5	9,846
Unitary HVAC Measures			728	1.0	0	\$94	\$23,969	\$1,260	\$22,709	241.8	733
ECM 9	Install High Efficiency Air Conditioning Units	No	728	1.0	0	\$94	\$23,969	\$1,260	\$22,709	241.8	733
Electric Chiller Replacement			1,870	4.2	0	\$241	\$85,623	\$1,552	\$84,071	348.4	1,883
ECM 10	Install High Efficiency Chillers	No	1,870	4.2	0	\$241	\$85,623	\$1,552	\$84,071	348.4	1,883
Gas Heating (HVAC/Process) Replacement			0	0.0	70	\$941	\$59,499	\$3,784	\$55,715	59.2	8,235
ECM 11	Install High Efficiency Hot Water Boilers	No	0	0.0	70	\$941	\$59,499	\$3,784	\$55,715	59.2	8,235
Domestic Water Heating Upgrade			1,963	0.0	19	\$506	\$8,902	\$855	\$8,047	15.9	4,184
ECM 12	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	10	\$131	\$8,493	\$697	\$7,797	59.5	1,146
ECM 13	Install Low-Flow DHW Devices	Yes	1,963	0.0	9	\$375	\$409	\$158	\$250	0.7	3,038
TOTALS (COST EFFECTIVE MEASURES)			55,826	11.2	3	\$7,239	\$53,024	\$11,606	\$41,417	5.7	56,529
TOTALS (ALL MEASURES)			62,693	18.3	83	\$9,197	\$243,376	\$19,199	\$224,178	24.4	72,824

* - 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

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

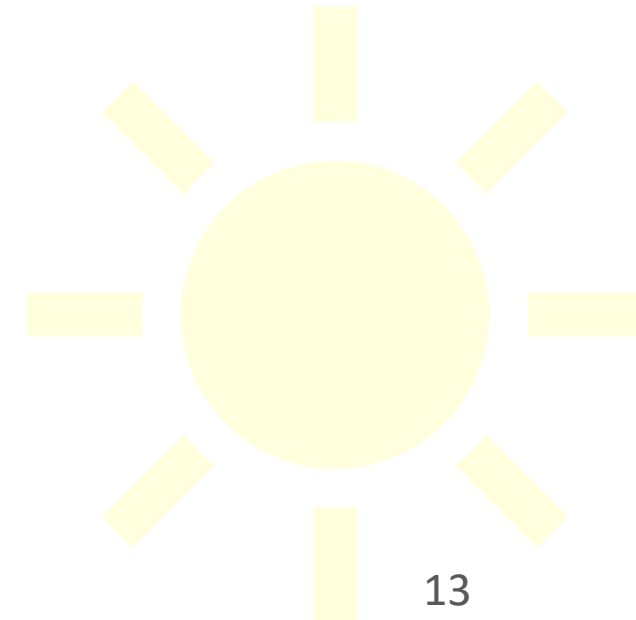
	East Amwell Township School
Potential:	Medium



SOLAR ENERGY GENERATION POTENTIAL

NJCleanEnergy.com/renewable-energy

	East Amwell School
<i>Potential:</i>	High
<i>System Potential: (kW)</i>	160
<i>Electric Generation: (kWh per year)</i>	190,619
<i>Displaced Cost: (per year)</i>	\$24,600



FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

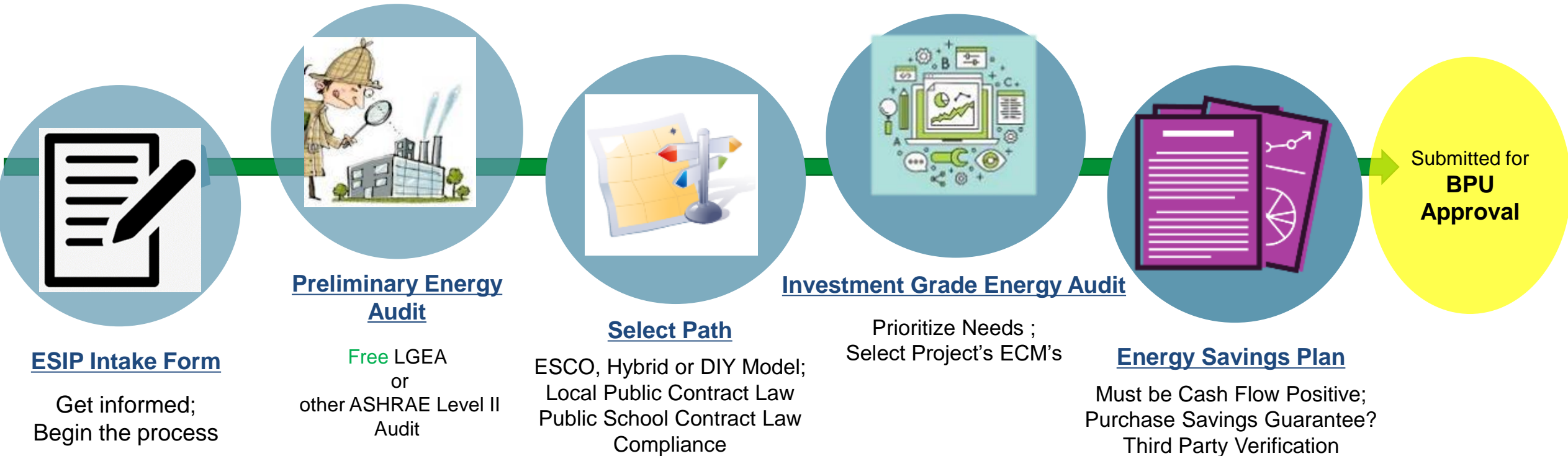
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- 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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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

JCP&L

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Casey Hennessy - CHennessy@sjindustries.com

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THANK YOU

