

# ***Township of Verona***

## ***LGEA Results and ESIP***

April 7, 2025



## New Jersey's Clean Energy Program

*Lighting the way to New Jersey's Clean Energy Future*

# INTRODUCTIONS

Local Government Energy Audit | NJ OCE Web Site



- *NJ Clean Energy Program*
  - Sarah Walters – LGEA Program Manager
  - Amanda Muench – LGEA Account Manager
  - Michelle Rossi – ESIP Coordinator (BPU)



## Local Government Energy Audit Report

Town Hall and Police Station

February 24, 2025

*Prepared for:*

Verona Township  
600 Bloomfield Avenue  
Verona Township, New Jersey 00744

*Prepared by:*

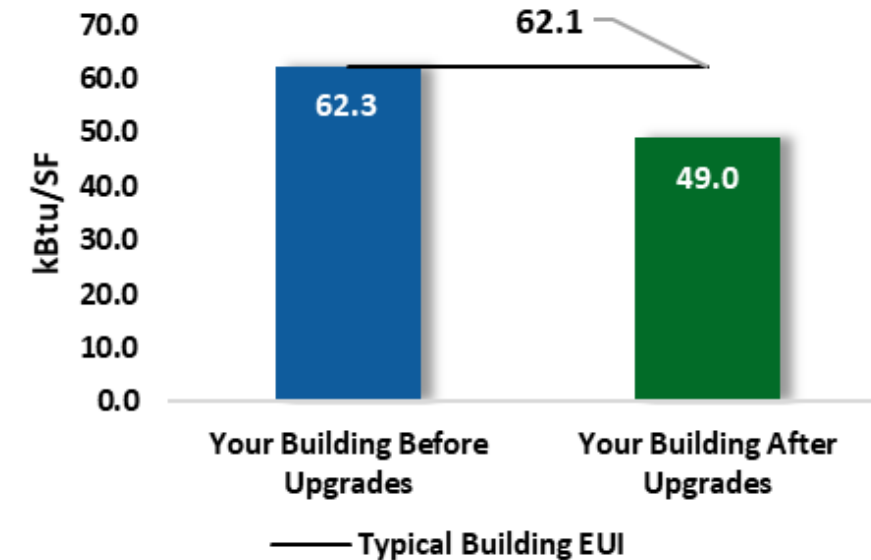
TRC  
317 George Street  
New Brunswick, New Jersey 08901



# AGENDA

[Local Government Energy Audit](#) | [NJ OCE Web Site](#)

- LGEA Process
- Township of Verona LGEA Scope
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified
- Energy Savings Improvement Program (ESIP)

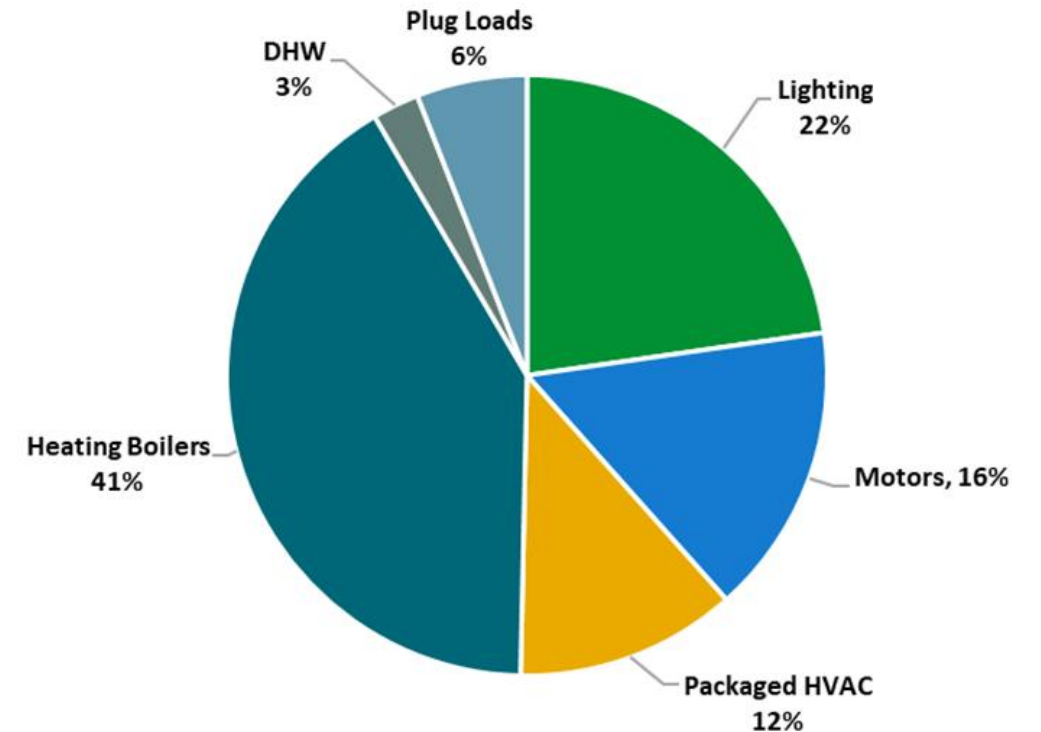


*Current Town Hall Energy Use Intensity (EUI) vs.  
Potential Town Hall EUI After Upgrades*

# LGEA PROCESS

[Local Government Energy Audit](#) | [NJ OCE Web Site](#)

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



*Town Hall Energy Use By System*

# SITE VISIT & UTILITY ANALYSIS

[Local Government Energy Audit | NJ OCE Web Site](#)

## Overview of Systems, Baseline & Existing Conditions:

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

## Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

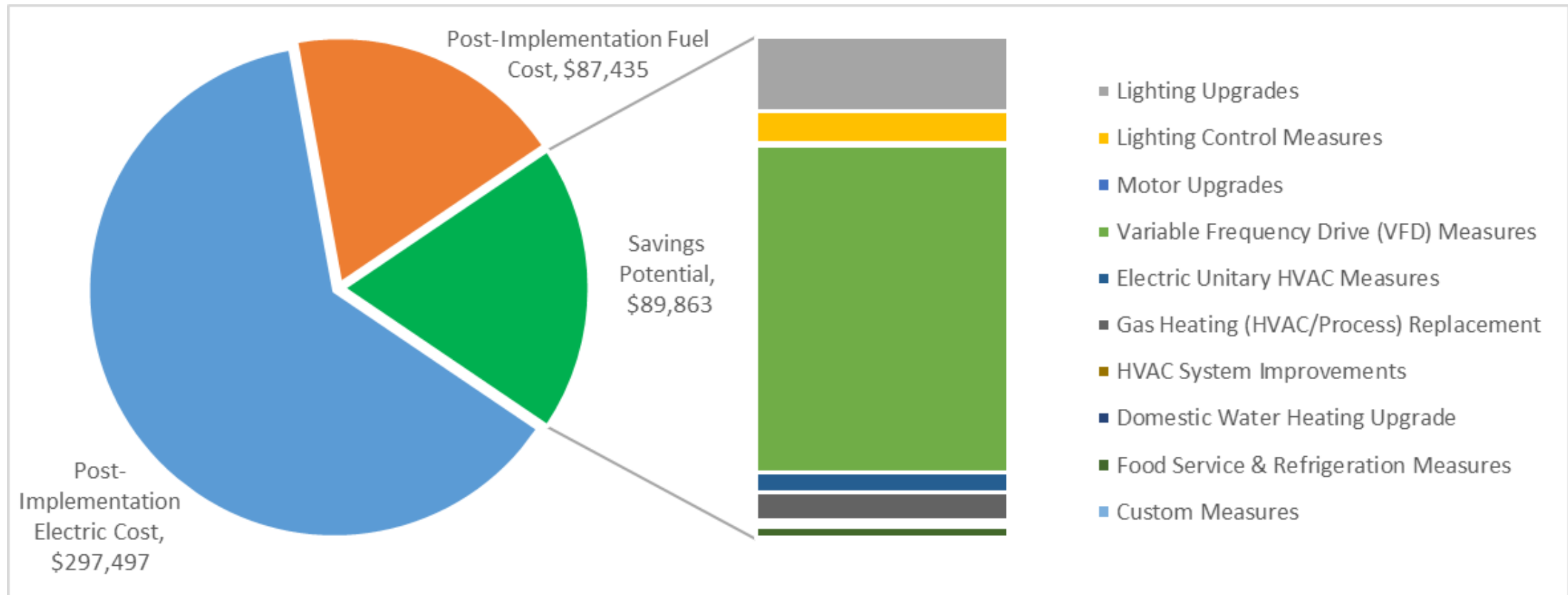
## Sites Visited/Analyzed

- Town Hall & Police Station
- Community Center – Main Building & VCC Annex
- Library
- DPW Garages
- B&G Shop
- Firehouse #2
- Waste Water Treatment Plant
- Hillwood Well House
- Verona Community Pool

# ALL OPPORTUNITIES

[Local Government Energy Audit](#) | [NJ OCE Web Site](#)

## Savings Potential



# ALL OPPORTUNITIES

Local Government Energy Audit | NJ OCE Web Site

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			<b>82,948</b>	<b>25.9</b>	<b>-7.4</b>	<b>\$13,225</b>	<b>\$67,150</b>	<b>\$10,530</b>	<b>\$56,620</b>	<b>4.3</b>	<b>82,662</b>
ECM 1	Install LED Fixtures	Yes	37,827	4.5	-2.1	\$5,009	\$40,120	\$6,220	\$33,900	6.8	37,845
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,670	0.4	-0.4	\$241	\$860	\$100	\$760	3.2	1,640
ECM 3	Retrofit Fixtures with LED Lamps	Yes	43,451	21.0	-4.9	\$7,975	\$26,170	\$4,210	\$21,960	2.8	43,176
<b>Lighting Control Measures</b>			<b>34,045</b>	<b>10.5</b>	<b>-6.8</b>	<b>\$5,882</b>	<b>\$57,400</b>	<b>\$10,500</b>	<b>\$46,900</b>	<b>8.0</b>	<b>33,486</b>
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	30,405	9.6	-6.0	\$5,272	\$49,260	\$5,830	\$43,430	8.2	29,912
ECM 5	Install High/Low Lighting Controls	Yes	3,640	0.9	-0.8	\$610	\$8,140	\$4,670	\$3,470	5.7	3,575
<b>Motor Upgrades</b>			<b>2,213</b>	<b>0.6</b>	<b>0.0</b>	<b>\$367</b>	<b>\$8,100</b>	<b>\$0</b>	<b>\$8,100</b>	<b>22.1</b>	<b>2,228</b>
ECM 6	Premium Efficiency Motors	No	2,213	0.6	0.0	\$367	\$8,100	\$0	\$8,100	22.1	2,228
<b>Variable Frequency Drive (VFD) Measures</b>			<b>407,020</b>	<b>71.2</b>	<b>0.0</b>	<b>\$58,429</b>	<b>\$254,700</b>	<b>\$11,700</b>	<b>\$243,000</b>	<b>4.2</b>	<b>409,866</b>
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	80,144	24.3	0.0	\$14,927	\$130,400	\$8,000	\$122,400	8.2	80,704
ECM 8	Install VFDs on Heating Water Pumps	Yes	11,327	1.5	0.0	\$2,124	\$30,000	\$1,500	\$28,500	13.4	11,406
ECM 9	Install VFDs on Process/Pool Filtration Pumps	Yes	315,549	45.4	0.0	\$41,378	\$94,300	\$2,200	\$92,100	2.2	317,755
<b>Unitary HVAC Measures</b>			<b>20,242</b>	<b>19.0</b>	<b>0.0</b>	<b>\$3,628</b>	<b>\$221,700</b>	<b>\$9,600</b>	<b>\$212,100</b>	<b>58.5</b>	<b>20,384</b>
ECM 10	Install High Efficiency Air Conditioning Units	No	17,552	16.2	0.0	\$3,182	\$195,600	\$8,600	\$187,000	58.8	17,675
ECM 11	Install High Efficiency Heat Pumps	No	2,690	2.8	0.0	\$446	\$26,100	\$1,000	\$25,100	56.2	2,709
<b>Gas Heating (HVAC/Process) Replacement</b>			<b>0</b>	<b>0.0</b>	<b>498.6</b>	<b>\$4,956</b>	<b>\$194,000</b>	<b>\$10,500</b>	<b>\$183,500</b>	<b>37.0</b>	<b>58,375</b>
ECM 12	Install High Efficiency Hot Water Boilers	No	0	0.0	339.5	\$3,435	\$170,800	\$8,000	\$162,800	47.4	39,747
ECM 13	Install High Efficiency Furnaces	Yes	0	0.0	159.1	\$1,521	\$23,200	\$2,500	\$20,700	13.6	18,628
<b>HVAC System Improvements</b>			<b>507</b>	<b>0.0</b>	<b>29.6</b>	<b>\$442</b>	<b>\$1,790</b>	<b>\$130</b>	<b>\$1,660</b>	<b>3.8</b>	<b>3,978</b>
ECM 14	Install Programmable Thermostats	Yes	222	0.0	8.8	\$170	\$760	\$0	\$760	4.5	1,249
ECM 15	Install Pipe Insulation	Yes	286	0.0	20.8	\$272	\$1,030	\$130	\$900	3.3	2,729
<b>Domestic Water Heating Upgrade</b>			<b>343</b>	<b>0.0</b>	<b>29.1</b>	<b>\$624</b>	<b>\$3,210</b>	<b>\$420</b>	<b>\$2,790</b>	<b>4.5</b>	<b>4,469</b>
ECM 16	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	1.8	\$21	\$2,200	\$200	\$2,000	93.8	206
ECM 17	Install Low-Flow DHW Devices	Yes	343	0.0	27.4	\$603	\$1,010	\$220	\$790	1.3	4,263
<b>Food Service &amp; Refrigeration Measures</b>			<b>9,953</b>	<b>1.1</b>	<b>0.0</b>	<b>\$1,874</b>	<b>\$2,160</b>	<b>\$300</b>	<b>\$1,860</b>	<b>1.0</b>	<b>10,023</b>
ECM 18	Vending Machine Control	Yes	9,953	1.1	0.0	\$1,874	\$2,160	\$300	\$1,860	1.0	10,023
<b>Custom Measures</b>			<b>-9,423</b>	<b>0.0</b>	<b>110.0</b>	<b>-\$435</b>	<b>\$17,400</b>	<b>\$0</b>	<b>\$17,400</b>	<b>-40.0</b>	<b>3,391</b>
ECM 19	Replace Electric Water Heater with Heat Pump Water Heater	No	809	0.0	0.0	\$99	\$2,500	\$0	\$2,500	25.3	815
ECM 20	Replace Gas Fired Water Heater with Heat Pump Water Heater	No	-10,232	0.0	110.0	-\$534	\$14,900	\$0	\$14,900	-27.9	2,576
<b>TOTALS (ALL MEASURES)</b>			<b>547,849</b>	<b>128.3</b>	<b>653.1</b>	<b>\$88,993</b>	<b>\$827,610</b>	<b>\$53,680</b>	<b>\$773,930</b>	<b>8.7</b>	<b>628,861</b>

\* - 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).

# FINANCING MECHANISM: ESIP

[NJCleanEnergy.com/ESIP](http://NJCleanEnergy.com/ESIP)

## ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

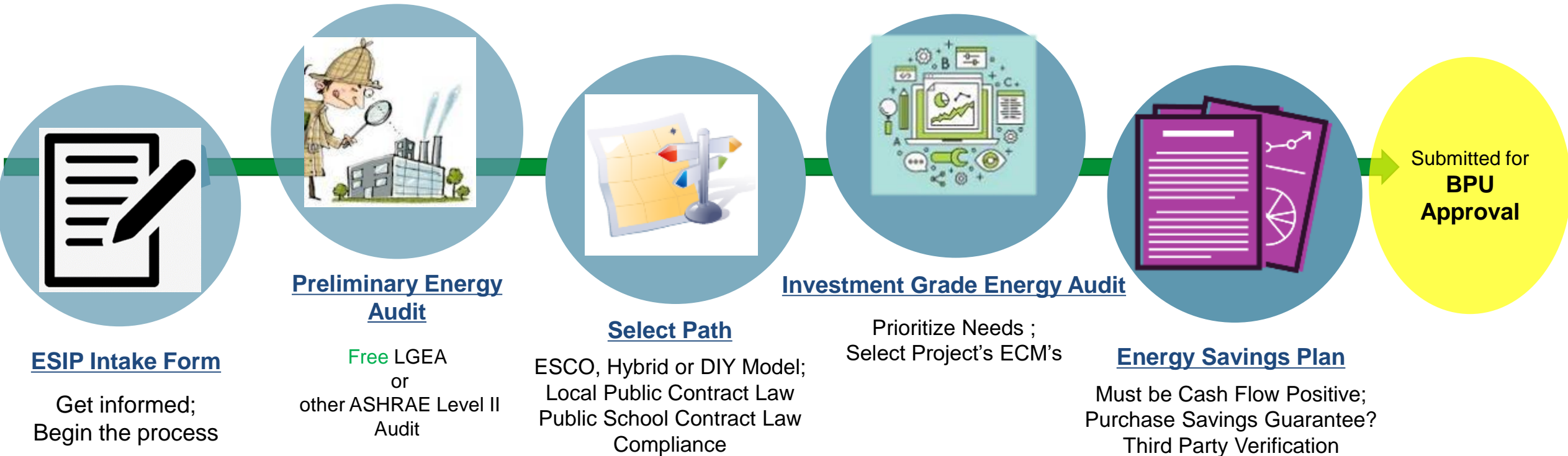
- Energy Performance Contracting = NJ ESIP Program
- A creative tool and financing mechanism that allows public entities to make energy efficiency improvements without impacting their budgets
- Administered by the NJBPU
- Project is paid for with the value of its own energy savings
- 2 Options: Lease 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](http://NJCleanEnergy.com/ESIP)

## FOR MORE INFORMATION

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New Jersey's  
**cleanenergy**  
program™



# THANK YOU!

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