

LGEA Presentation

Egg Harbor City Public Schools

December 22, 2021



New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

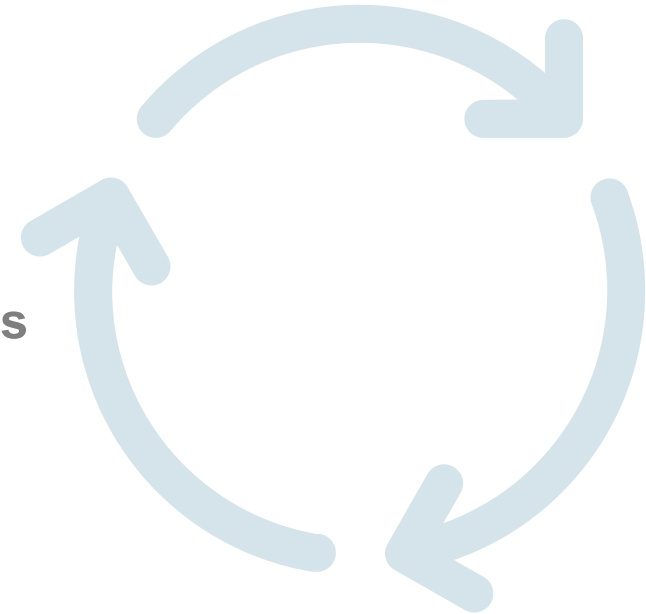
- *Egg Harbor City Public Schools*
 - Jason Bedell – Business Administrator
 - John Middleton – Becica Associates LLC
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Moussa Traore – LGEA Lead Auditor
 - Ryan Knippenberg – LGEA Project Auditor
 - Amanda Muench– LGEA Account Manager
 - Lori Carlin – Outreach Organizer
 - Michelle Rossi – ESIP Coordinator (BPU)

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)
- C&I Transition of EE Programs
- Questions regarding the draft audit report
- Next steps for Egg Harbor City Public Schools

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/Refrigeration

Utility Consumption:

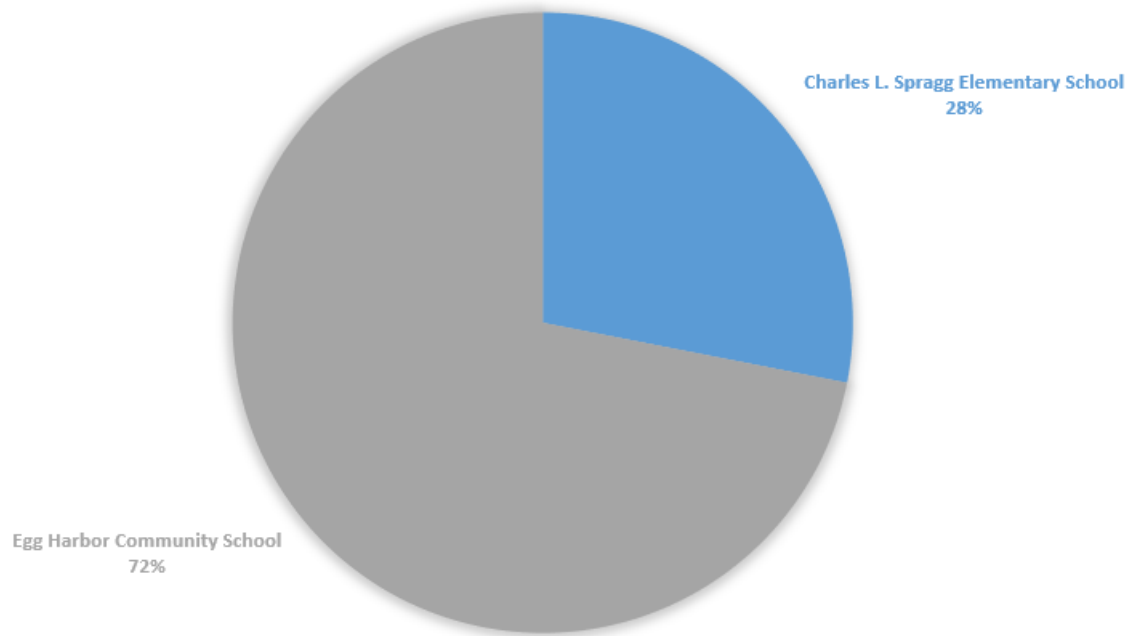
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

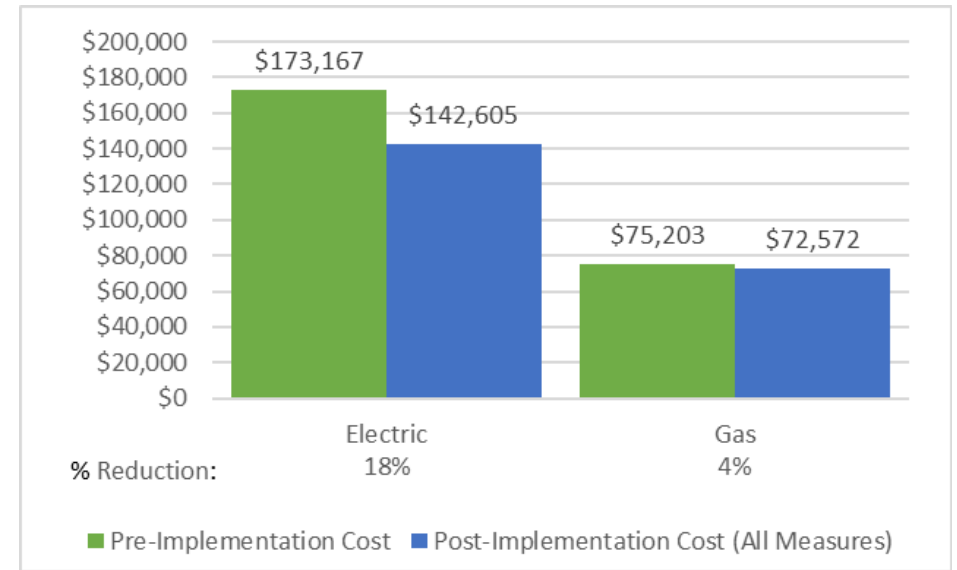
- Charles L. Spragg Elementary School
 - File Storage
 - Shed
- Egg Harbor Community School

UTILITY BREAKOUT

Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

ENERGY STAR® Statement of Energy Performance

73
ENERGY STAR® Score¹

Charles L. Spragg Elementary School (campus)
Primary Property Type: K-12 School
Gross Floor Area (ft²): 46,772
Built: 1955
For Year Ending: March 31, 2021
Date Generated: November 02, 2021

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 Charles L. Spragg Elementary School (campus) 601 Buffalo Avenue Egg Harbor City, New Jersey 08215	Property Owner Egg Harbor City Public School District 730 Havana Avenue Egg Harbor City, NJ 08215 609-965-1034	Primary Contact Jason Bedell 730 Havana Avenue Egg Harbor City, NJ 08215 609-964-1034, x101 jbedell@eggharborcityschools.com
Property ID: 18205322		
Energy Consumption and Energy Use Intensity (EUI)		
Site EUI 49.4 kBtu/ft ²	Annual Energy Fuel Natural Gas (kBtu) 1,392,688 (6%) Electric - Grid (kBtu) 916,363 (4%)	National Median Comparison National Median Site EUI (kBtu/ft ²) 64.1 National Median Source EUI (kBtu/ft ²) 111.8 % Diff from National Median Source EUI -23%
Source EUI 86.1 kBtu/ft ²		Annual Emissions Greenhouse Gas Emissions (Metric Tons CO ₂ e/year) 159

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
49.4 kBtu/ft²

Source EUI
86.1 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft ²)	64.1
National Median Source EUI (kBtu/ft ²)	111.8
% Diff from National Median Source EUI	-23%

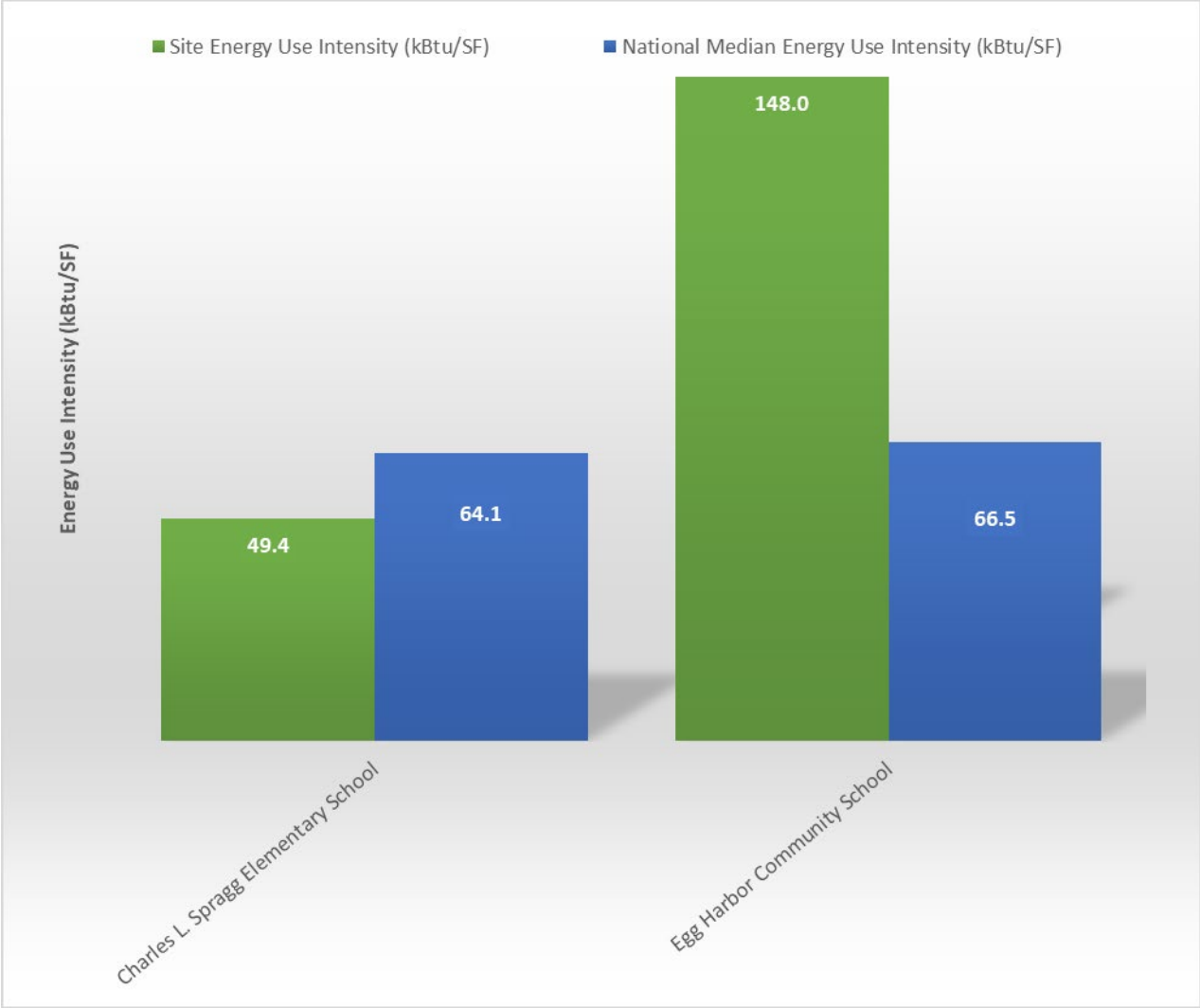
Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO ₂ e/year)	159
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Site Name	Energy Star Score
Charles L. Spragg Elementary School	73
Egg Harbor Community School	1

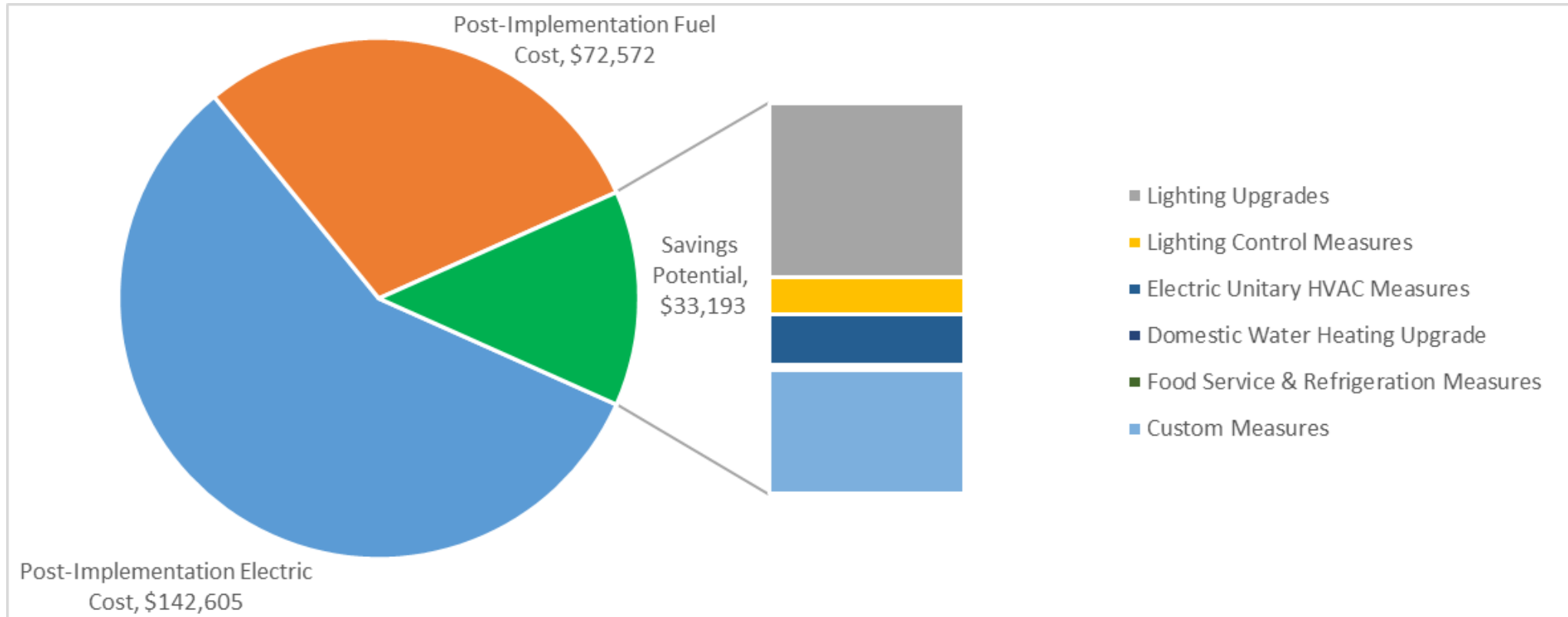
ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

BENCHMARKING



ALL OPPORTUNITIES

Savings Potential



ALL OPPORTUNITIES

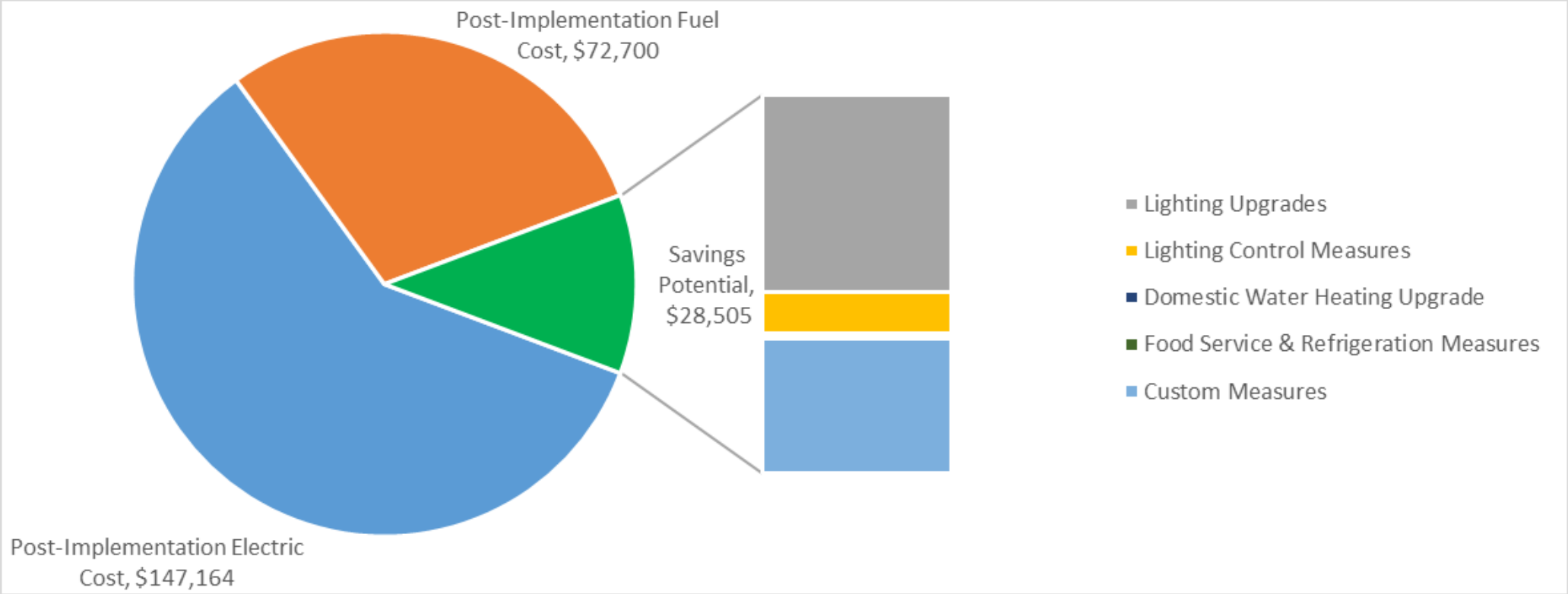
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		120,121	17.4	-20.2	\$14,846	\$57,498	\$14,064	\$43,434	2.9	118,592
ECM 1	Install LED Fixtures	28,636	0.0	0.0	\$3,571	\$16,936	\$4,450	\$12,486	3.5	28,837
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	1,376	0.6	-0.3	\$211	\$963	\$140	\$823	3.9	1,352
ECM 3	Retrofit Fixtures with LED Lamps	90,108	16.8	-19.9	\$11,064	\$39,599	\$9,474	\$30,125	2.7	88,403
Lighting Control Measures		21,782	5.7	-4.7	\$3,142	\$21,758	\$4,815	\$16,943	5.4	21,385
ECM 4	Install Occupancy Sensor Lighting Controls	18,801	5.3	-4.1	\$2,693	\$17,708	\$1,770	\$15,938	5.9	18,457
ECM 5	Install High/Low Lighting Controls	2,981	0.4	-0.6	\$449	\$4,050	\$3,045	\$1,005	2.2	2,928
Electric Unitary HVAC Measures		27,069	23.3	0.0	\$4,229	\$147,738	\$11,430	\$136,308	32.2	27,259
ECM 6	Install High Efficiency Air Conditioning Units	27,069	23.3	0.0	\$4,229	\$147,738	\$11,430	\$136,308	32.2	27,259
Domestic Water Heating Upgrade		0	0.0	35.4	\$393	\$6,578	\$658	\$5,920	15.1	4,142
ECM 7	Install High Efficiency Gas-Fired Water Heater	0	0.0	5.9	\$74	\$5,818	\$420	\$5,398	73.1	687
ECM 8	Install Low-Flow DHW Devices	0	0.0	29.5	\$319	\$759	\$238	\$521	1.6	3,455
Food Service & Refrigeration Measures		527	0.1	0.0	\$82	\$607	\$80	\$527	6.4	531
ECM 9	Refrigerator/Freezer Case Electrically Commutated Motors	527	0.1	0.0	\$82	\$607	\$80	\$527	6.4	531
Custom Measures		63,993	0.0	241.4	\$10,501	\$23,773	\$0	\$23,773	2.3	92,706
ECM 10	Optimize HVAC Schedule	61,531	0.0	241.4	\$10,116	\$19,200	\$0	\$19,200	1.9	90,227
TOTALS		233,493	46.5	251.9	\$33,193	\$257,951	\$31,047	\$226,904	6.8	264,615

* - All incentives presented in this table are included as placeholders 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 ₂ e Emissions Reduction (lbs)
Lighting Upgrades		120,121	17.4	-20.2	\$14,846	\$57,498	\$14,064	\$43,434	2.9	118,592
ECM 1	Install LED Fixtures	28,636	0.0	0.0	\$3,571	\$16,936	\$4,450	\$12,486	3.5	28,837
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	1,376	0.6	-0.3	\$211	\$963	\$140	\$823	3.9	1,352
ECM 3	Retrofit Fixtures with LED Lamps	90,108	16.8	-19.9	\$11,064	\$39,599	\$9,474	\$30,125	2.7	88,403
Lighting Control Measures		21,782	5.7	-4.7	\$3,142	\$21,758	\$4,815	\$16,943	5.4	21,385
ECM 4	Install Occupancy Sensor Lighting Controls	18,801	5.3	-4.1	\$2,693	\$17,708	\$1,770	\$15,938	5.9	18,457
ECM 5	Install High/Low Lighting Controls	2,981	0.4	-0.6	\$449	\$4,050	\$3,045	\$1,005	2.2	2,928
Domestic Water Heating Upgrade		0	0.0	29.5	\$319	\$759	\$238	\$521	1.6	3,455
ECM 8	Install Low-Flow DHW Devices	0	0.0	29.5	\$319	\$759	\$238	\$521	1.6	3,455
Food Service & Refrigeration Measures		527	0.1	0.0	\$82	\$607	\$80	\$527	6.4	531
ECM 9	Refrigerator/Freezer Case Electrically Commutated Motors	527	0.1	0.0	\$82	\$607	\$80	\$527	6.4	531
Custom Measures		61,531	0.0	241.4	\$10,116	\$19,200	\$0	\$19,200	1.9	90,227
ECM 10	Optimize HVAC Schedule	61,531	0.0	241.4	\$10,116	\$19,200	\$0	\$19,200	1.9	90,227
TOTALS		203,961	23.1	246.0	\$28,505	\$99,822	\$19,197	\$80,625	2.8	234,190

* - All incentives presented in this table are included as placeholders 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).

CHARLES L. SPRAGG ELEMENTARY

#	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			2,294	0.8	0	\$353	\$1,407	\$169	\$1,238	3.5	2,256
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,376	0.6	0	\$211	\$963	\$140	\$823	3.9	1,352
ECM 2	Retrofit Fixtures with LED Lamps	Yes	918	0.2	0	\$141	\$444	\$29	\$415	2.9	904
Lighting Control Measures			15,251	4.7	-3	\$2,342	\$14,267	\$3,515	\$10,752	4.6	14,984
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	12,563	4.3	-3	\$1,930	\$11,342	\$1,415	\$9,927	5.1	12,344
ECM 4	Install High/Low Lighting Controls	Yes	2,688	0.4	-1	\$413	\$2,925	\$2,100	\$825	2.0	2,641
Unitary HVAC Measures			27,069	23.3	0	\$4,229	\$147,738	\$11,430	\$136,308	32.2	27,259
ECM 5	Install High Efficiency Air Conditioning Units	No	27,069	23.3	0	\$4,229	\$147,738	\$11,430	\$136,308	32.2	27,259
Domestic Water Heating Upgrade			0	0.0	14	\$178	\$6,012	\$480	\$5,531	31.0	1,661
ECM 6	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	6	\$74	\$5,818	\$420	\$5,398	73.1	687
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	8	\$105	\$194	\$60	\$133	1.3	974
Food Service & Refrigeration Measures			527	0.1	0	\$82	\$607	\$80	\$527	6.4	531
ECM 8	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	527	0.1	0	\$82	\$607	\$80	\$527	6.4	531
Custom Measures			2,462	0.0	0	\$385	\$4,573	\$0	\$4,573	11.9	2,479
ECM 9	Install Heat Pump Water Heater	No	2,462	0.0	0	\$385	\$4,573	\$0	\$4,573	11.9	2,479
TOTALS (COST EFFECTIVE MEASURES)			18,072	5.6	5	\$2,882	\$16,474	\$3,824	\$12,650	4.4	18,745
TOTALS (ALL MEASURES)			47,604	28.9	11	\$7,569	\$174,604	\$15,674	\$158,929	21.0	49,170

* - 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.

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EGG HARBOR COMMUNITY 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			117,826	16.5	-20	\$14,494	\$56,091	\$13,895	\$42,196	2.9	116,336
ECM 1	Install LED Fixtures	Yes	28,636	0.0	0	\$3,571	\$16,936	\$4,450	\$12,486	3.5	28,837
ECM 2	Retrofit Fixtures with LED Lamps	Yes	89,190	16.5	-20	\$10,923	\$39,155	\$9,445	\$29,710	2.7	87,499
Lighting Control Measures			6,531	1.0	-2	\$799	\$7,491	\$1,300	\$6,191	7.7	6,401
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	6,238	1.0	-1	\$763	\$6,366	\$355	\$6,011	7.9	6,114
ECM 4	Install High/Low Lighting Controls	Yes	293	0.0	0	\$36	\$1,125	\$945	\$180	5.0	287
Domestic Water Heating Upgrade			0	0.0	21	\$214	\$566	\$178	\$388	1.8	2,481
ECM 5	Install Low-Flow DHW Devices	Yes	0	0.0	21	\$214	\$566	\$178	\$388	1.8	2,481
Custom Measures			61,531	0.0	241	\$10,116	\$19,200	\$0	\$19,200	1.9	90,227
ECM 6	Optimize HVAC Schedule	Yes	61,531	0.0	241	\$10,116	\$19,200	\$0	\$19,200	1.9	90,227
TOTALS (COST EFFECTIVE MEASURES)			185,889	17.6	241	\$25,623	\$83,347	\$15,373	\$67,975	2.7	215,445
TOTALS (ALL MEASURES)			185,889	17.6	241	\$25,623	\$83,347	\$15,373	\$67,975	2.7	215,445

* - 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.

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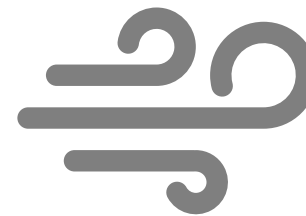
ENERGY EFFICIENT BEST PRACTICES

- 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

- Evaluate Heating/Cooling System



SOLAR ENERGY GENERATION POTENTIAL

	Community School
<i>Potential:</i>	HIGH
<i>System Potential: (kW)</i>	145
<i>Electric Generation: (kWh per year)</i>	172,749
<i>Displaced Cost: (per year)</i>	\$21,540

Successor Solar Incentive Program

<https://www.njcleanenergy.com/renewable-energy/programs/susi-program>

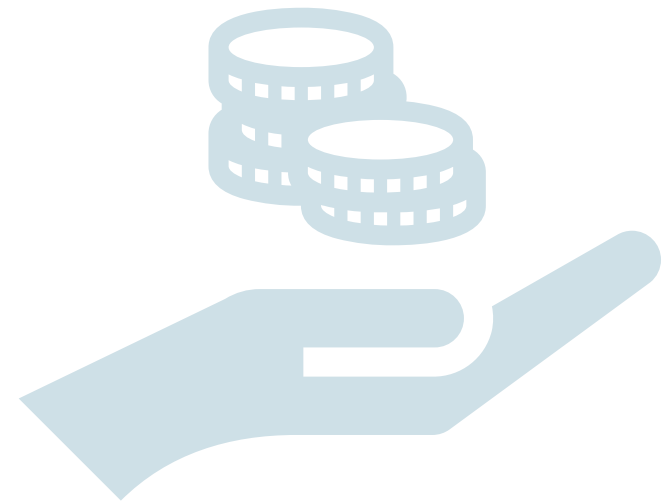
Community Solar Energy Pilot Program

<http://www.NJCleanEnergy.com/CommunitySolar>

FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting – NJ ESIP
- Financing Mechanism that allows state 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 self-funding loan
- Recent Energy Efficiency Transition
 - NJBPU Approved Incentive Programs
 - Utility or NJCEP
- Can be combined with Federal/State Pandemic Relief Funds
- No upfront capital expenses
- No referendum or impact to tax payers

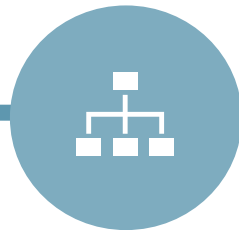


FINANCING MECHANISM: ESIP



**Preliminary
Energy Audit**

LGEA



Select Path

ESCO Model
Hybrid Model
DIY Model



**Investment Grade
Energy Audit**

Prioritize ECM's to
determine project

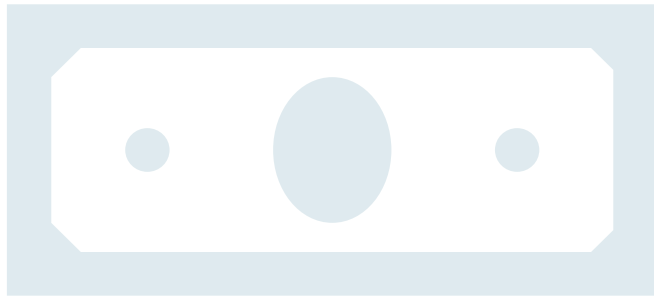


**Energy Savings Plan
Developed**

Cash Flow Positive
Third Part Audit of Plan



Submitted for
BPU
Approval



Energy SAVINGS Improvement Program

FOR MORE INFORMATION

Michelle Rossi

ESIP Coordinator

ESIP@bpu.nj.gov

o: 609.633.9641

c: 609.915.0903

C&I TRANSITION OF ENERGY EFFICIENCY PROGRAMS

<https://www.njcleanenergy.com/transition>

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



UTILITY RUN ENERGY EFFICIENCY PROGRAMS

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



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

Sarah Walters – LGEA Project Manager

SWalters@trccompanies.com

(732) 589-7372

Moussa Traore – LGEA Lead Energy Auditor

MTraore@trccompanies.com

(732) 902-1797

Amanda Muench – LGEA Account Manager

AMuench@trccompanies.com

(732) 612-9381

Ryan Knippenberg – LGEA Energy Auditor

RKnippenberg@trccompanies.com

(732) 439-7184

Lori Carlin – NJCEP Outreach Account Manager

LCarlin@trccompanies.com

(732) 259-4938

THANK YOU

