LGEA Presentation

Mainland Regional High School District

March 27, 2025

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

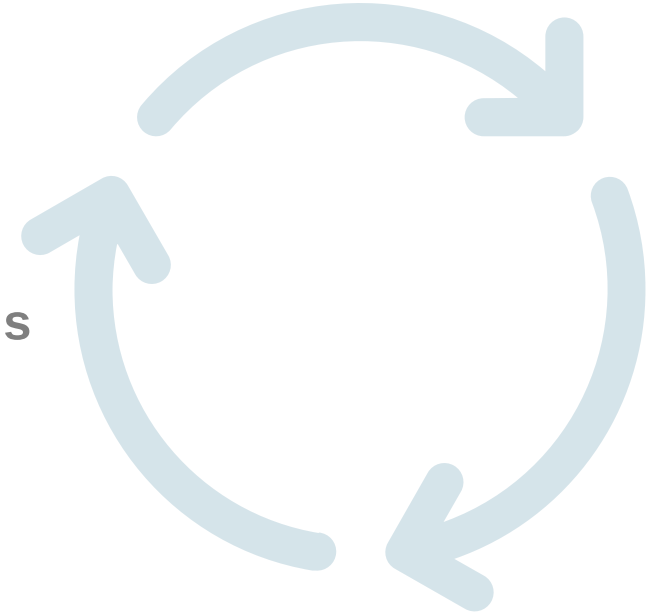
- *Mainland RHSD*
  - Judi Bessor
  - Caroline Jackson
  - Chandra Coady
  - Chuck Chole
- *NJ Clean Energy Program*
  - Sarah Walters – LGEA Project Manager
  - Moussa Traore – LGEA Technical Manager
  - Ryan Gibson – LGEA Project Auditor
  - Amanda Muench – LGEA Account Manager
  - Michelle Rossi - BPU
- *Utility Energy Efficiency Programs*
  - Kim Byk – South Jersey Gas (SJG)
  - Alex Haver – Atlantic City Electric (ACE)

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 Mainland Regional High School District

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 Service and Refrigeration Equipment
- Pool Systems
- Building Automation System (BAS)

Utility Consumption:

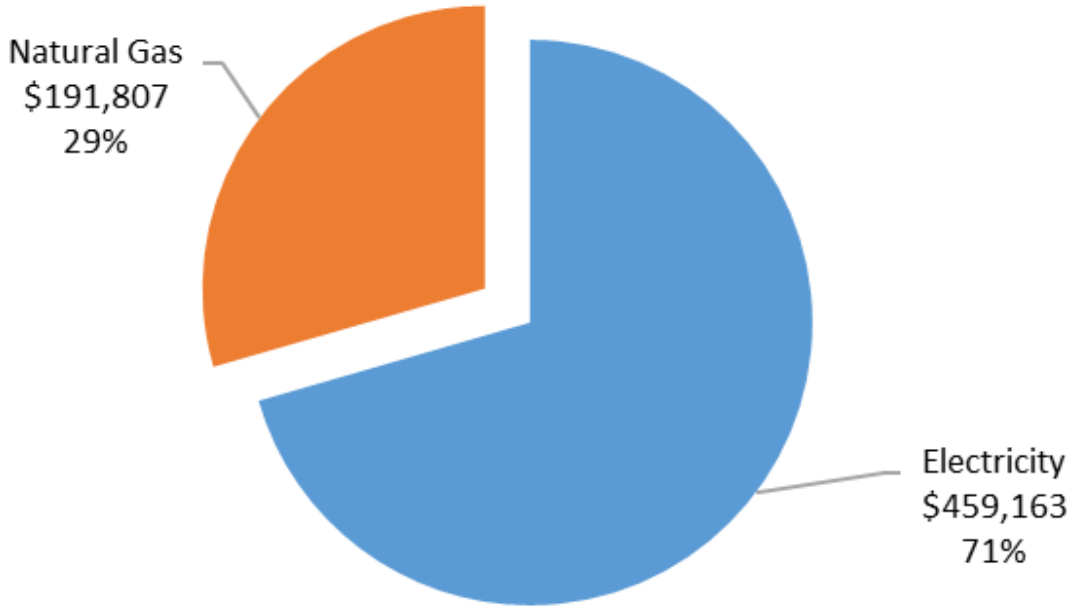
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Water Consumption and Costs

Sites Visited/Analyzed

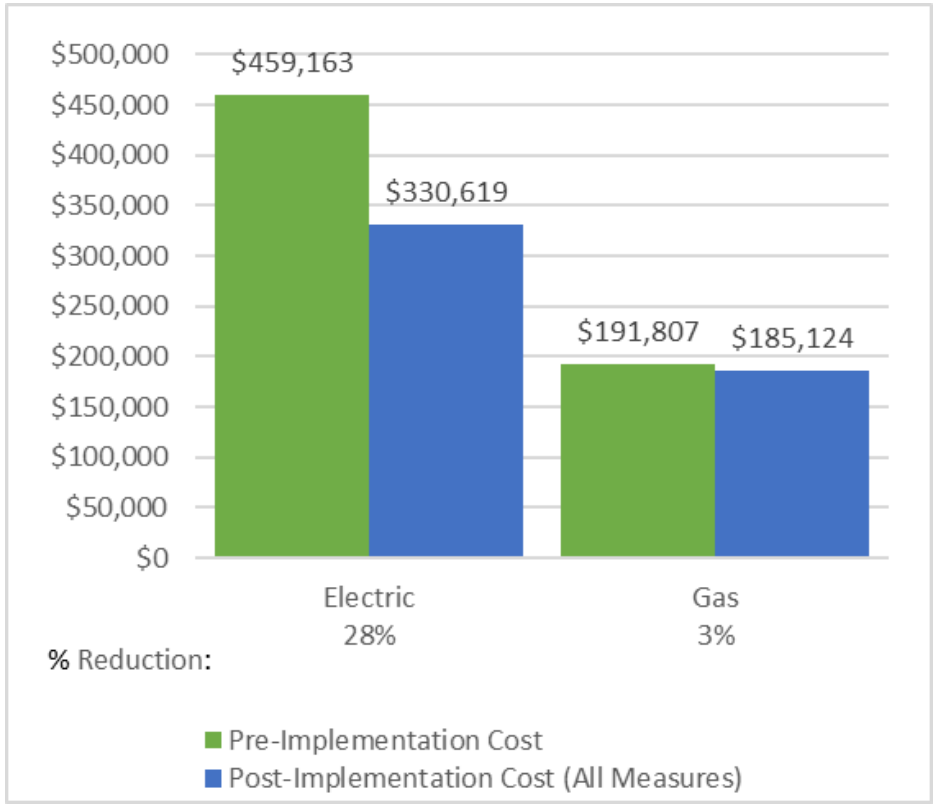
- Mainland Regional High School, including:
  - Maintenance Garage
  - Storage Garage

Utility Breakout

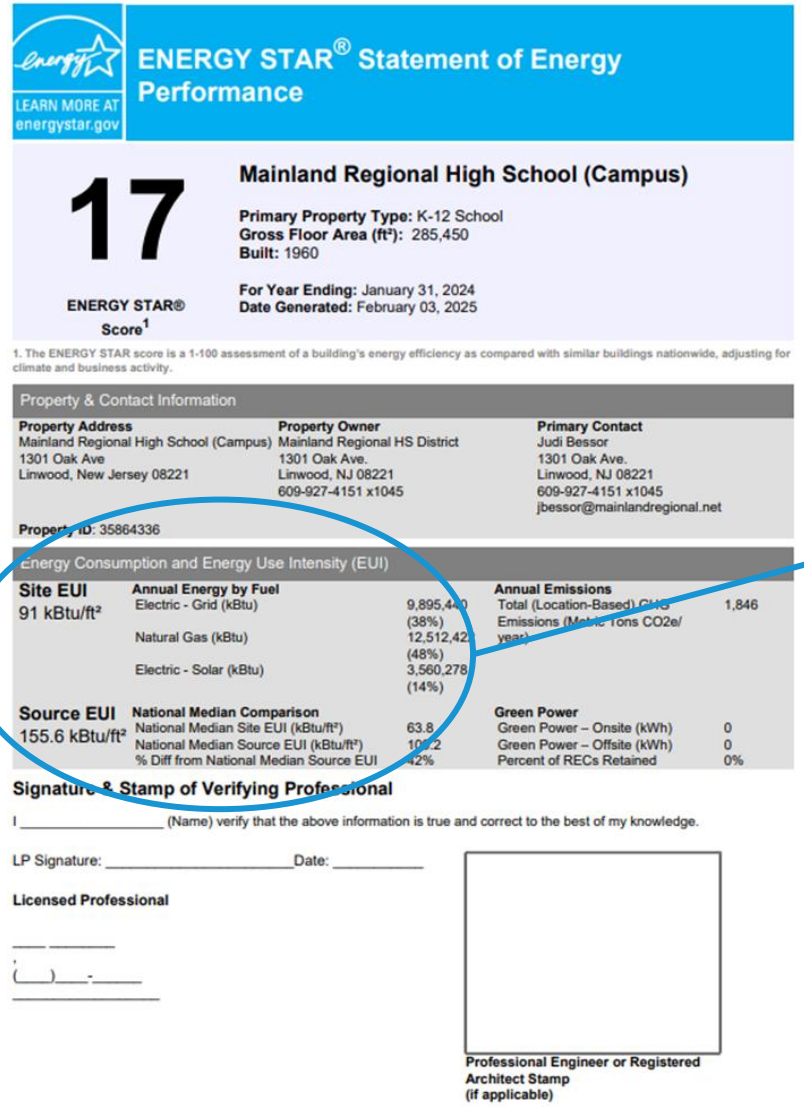
Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

17

ENERGY STAR® Score[1]

Mainland Regional High School (Campus)

Primary Property Type: K-12 School
Gross Floor Area (ft²): 285,450
Built: 1960

For Year Ending: January 31, 2024
Date Generated: February 03, 2025

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
Mainland Regional High School (Campus) 1301 Oak Ave Linwood, New Jersey 08221	Mainland Regional HS District 1301 Oak Ave. Linwood, NJ 08221 609-927-4151 x1045	Judi Bessor 1301 Oak Ave. Linwood, NJ 08221 609-927-4151 x1045 jbessor@mainlandregional.net

Property ID: 35864336

Energy Consumption and Energy Use Intensity (EUI)

Site EUI
91 kBtu/ft²

Annual Energy by Fuel	
Electric - Grid (kBtu)	9,895,440 (38%)
Natural Gas (kBtu)	12,512,422 (48%)
Electric - Solar (kBtu)	3,560,278 (14%)

Annual Emissions	
Total (Location-Based) GHG Emissions (Metric Tons CO2e/year)	1,846

Source EUI
155.6 kBtu/ft²

National Median Comparison	
National Median Site EUI (kBtu/ft²)	63.8
National Median Source EUI (kBtu/ft²)	109.2
% Diff from National Median Source EUI	42%

Green Power	
Green Power – Onsite (kWh)	0
Green Power – Offsite (kWh)	0
Percent of RECs Retained	0%

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 Name	ENERGY STAR® Score
Mainland RHSD-Campus	17

Site EUI
91 kBtu/ft²

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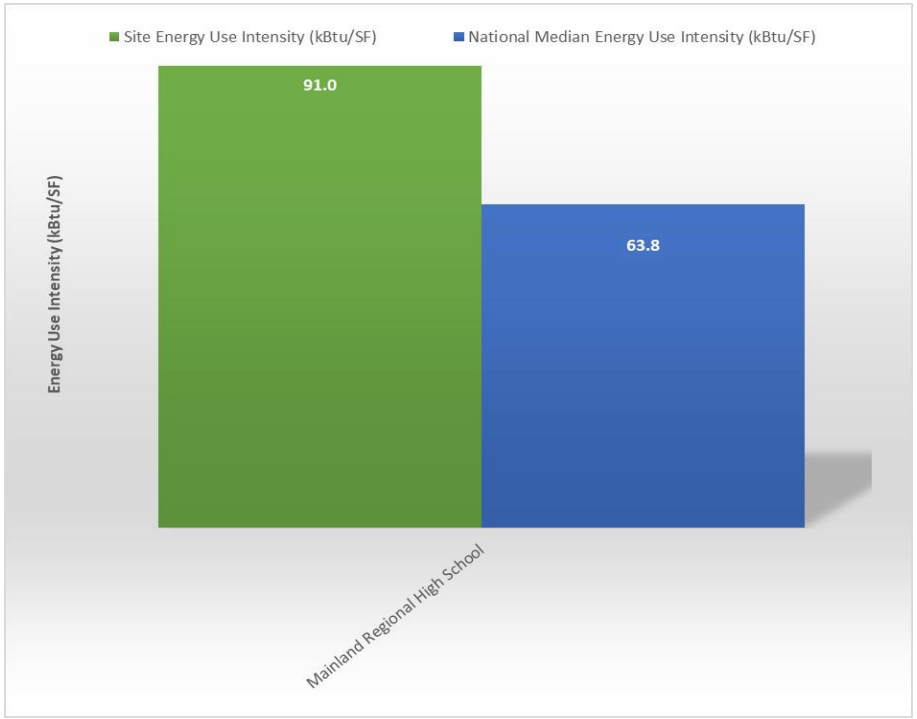
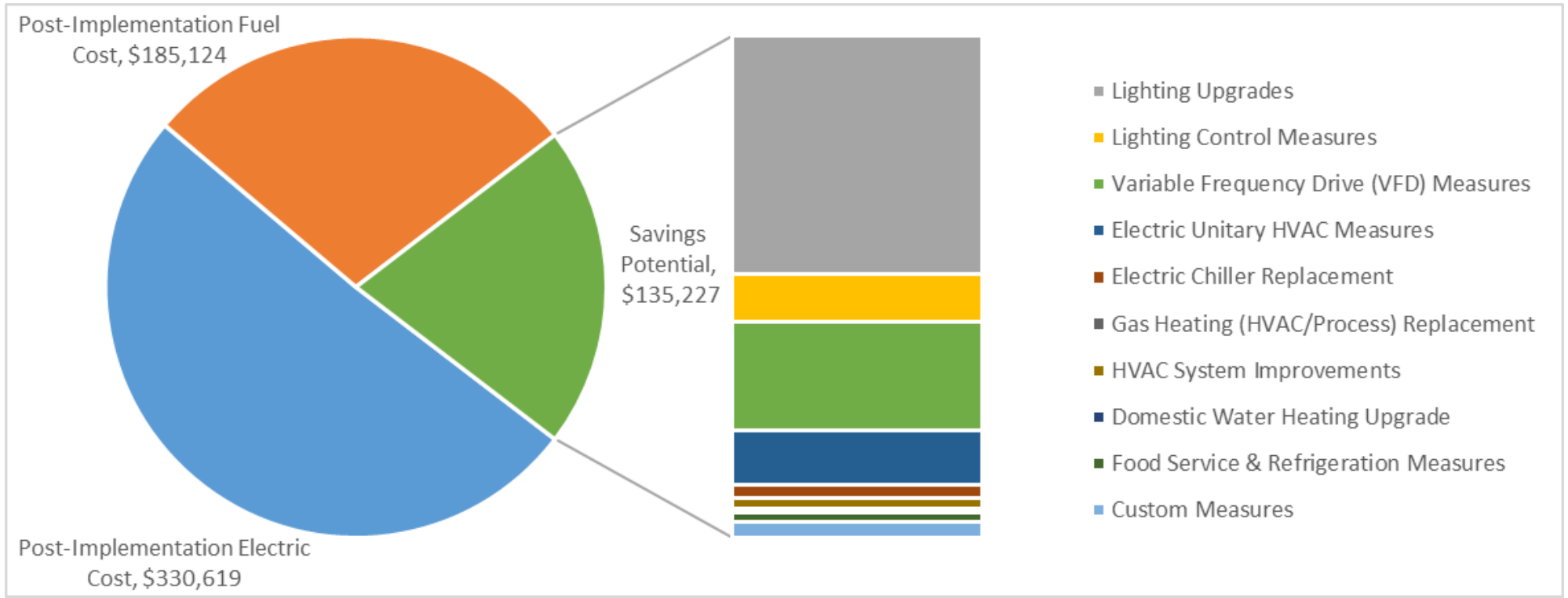


ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

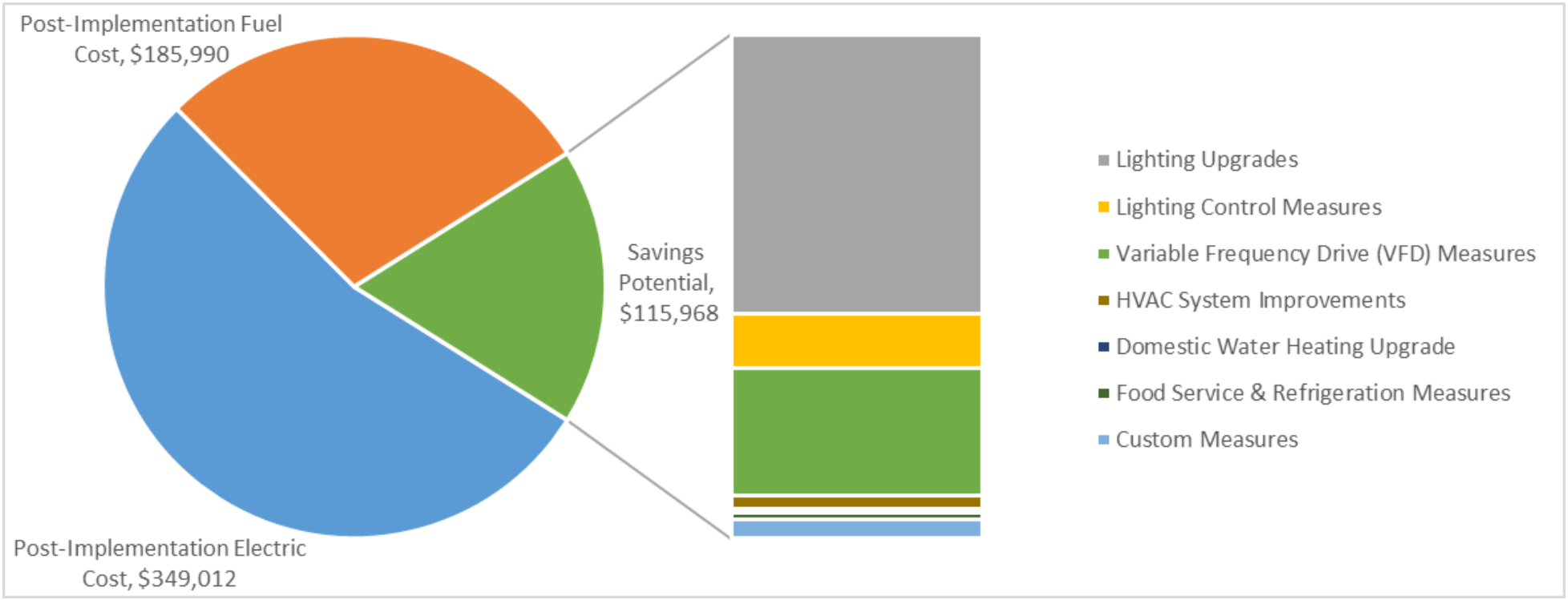
ALL OPPORTUNITIES

Savings Potential



Cost Effective Opportunities

Savings Potential



ALL OPPORTUNITIES (1 OF 2)

#	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			**558,413**	**82.4**	**-115**	**$64,135**	**$170,030**	**$33,870**	**$136,160**	**2.1**	**548,848**
ECM 1	Install LED Fixtures	Yes	5,081	0.0	0	$600	$5,570	$400	$5,170	8.6	5,116
ECM 2	Retrofit Fixtures with LED Lamps	Yes	553,332	82.4	-115	$63,535	$164,460	$33,470	$130,990	2.1	543,732
Lighting Control Measures			**110,965**	**15.4**	**-23**	**$12,739**	**$67,960**	**$7,980**	**$59,980**	**4.7**	**109,024**
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	110,500	15.4	-23	$12,686	$67,680	$7,800	$59,880	4.7	108,567
ECM 4	Install High/Low Lighting Controls	Yes	465	0.1	0	$53	$280	$180	$100	1.9	457
Variable Frequency Drive (VFD) Measures			**221,881**	**44.4**	**78**	**$27,378**	**$226,100**	**$15,700**	**$210,400**	**7.7**	**232,618**
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	211,435	44.3	0	$24,948	$213,800	$15,400	$198,400	8.0	212,914
ECM 6	Install VFDs on Kitchen Hood Fan Motors	Yes	10,445	0.1	78	$2,429	$12,300	$300	$12,000	4.9	19,705
Unitary HVAC Measures			**117,044**	**54.8**	**48**	**$14,549**	**$723,300**	**$34,200**	**$689,100**	**47.4**	**123,529**
ECM 7	Install High Efficiency Air Conditioning Units	No	114,350	52.0	48	$14,231	$708,800	$33,700	$675,100	47.4	120,817
ECM 8	Install High Efficiency Heat Pumps	No	2,694	2.9	0	$318	$14,500	$500	$14,000	44.0	2,713
Electric Chiller Replacement			**12,770**	**6.2**	**0**	**$1,507**	**$201,500**	**$3,100**	**$198,400**	**131.7**	**12,859**
ECM 9	Install High Efficiency Chillers	No	12,770	6.2	0	$1,507	$201,500	$3,100	$198,400	131.7	12,859

ALL OPPORTUNITIES (2 OF 2)

#	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)
Gas Heating (HVAC/Process) Replacement			**0**	**0.0**	**8**	**$128**	**$3,600**	**$500**	**$3,100**	**24.2**	**985**
ECM 10	Install High Efficiency Furnaces	No	0	0.0	8	$128	$3,600	$500	$3,100	24.2	985
HVAC System Improvements			**13,601**	**0.0**	**82**	**$2,852**	**$39,600**	**$0**	**$39,600**	**13.9**	**23,264**
ECM 11	Implement Demand Control Ventilation (DCV)	Yes	13,601	0.0	82	$2,852	$39,600	$0	$39,600	13.9	23,264
Domestic Water Heating Upgrade			**0**	**0.0**	**72**	**$1,104**	**$9,150**	**$1,610**	**$7,540**	**6.8**	**8,471**
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	72	$1,104	$9,150	$1,610	$7,540	6.8	8,471
Food Service & Refrigeration Measures			**19,347**	**2.0**	**0**	**$2,283**	**$29,790**	**$1,590**	**$28,200**	**12.4**	**19,482**
ECM 13	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,049	0.1	0	$124	$1,500	$160	$1,340	10.8	1,056
ECM 14	Refrigeration Controls	No	2,387	0.0	0	$282	$7,460	$330	$7,130	25.3	2,404
ECM 15	Replace Refrigeration Equipment	No	5,213	0.6	0	$615	$18,400	$800	$17,600	28.6	5,249
ECM 16	Vending Machine Control	Yes	10,699	1.2	0	$1,262	$2,430	$300	$2,130	1.7	10,773
Custom Measures			**0**	**0.0**	**287**	**$4,379**	**$43,500**	**$0**	**$43,500**	**9.9**	**33,604**
ECM 17	Install Semi-Automatic Cover for Swimming Pool	Yes	0	0.0	287	$4,379	$43,500	$0	$43,500	9.9	33,604
TOTALS (COST EFFECTIVE MEASURES)			**916,607**	**143.5**	**381**	**$113,972**	**$560,270**	**$59,620**	**$500,650**	**4.4**	**967,659**
TOTALS (ALL MEASURES)			**1,054,020**	**205.2**	**438**	**$131,053**	**$1,514,530**	**$98,550**	**$1,415,980**	**10.8**	**1,112,685**

* - 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

WATER BEST PRACTICES

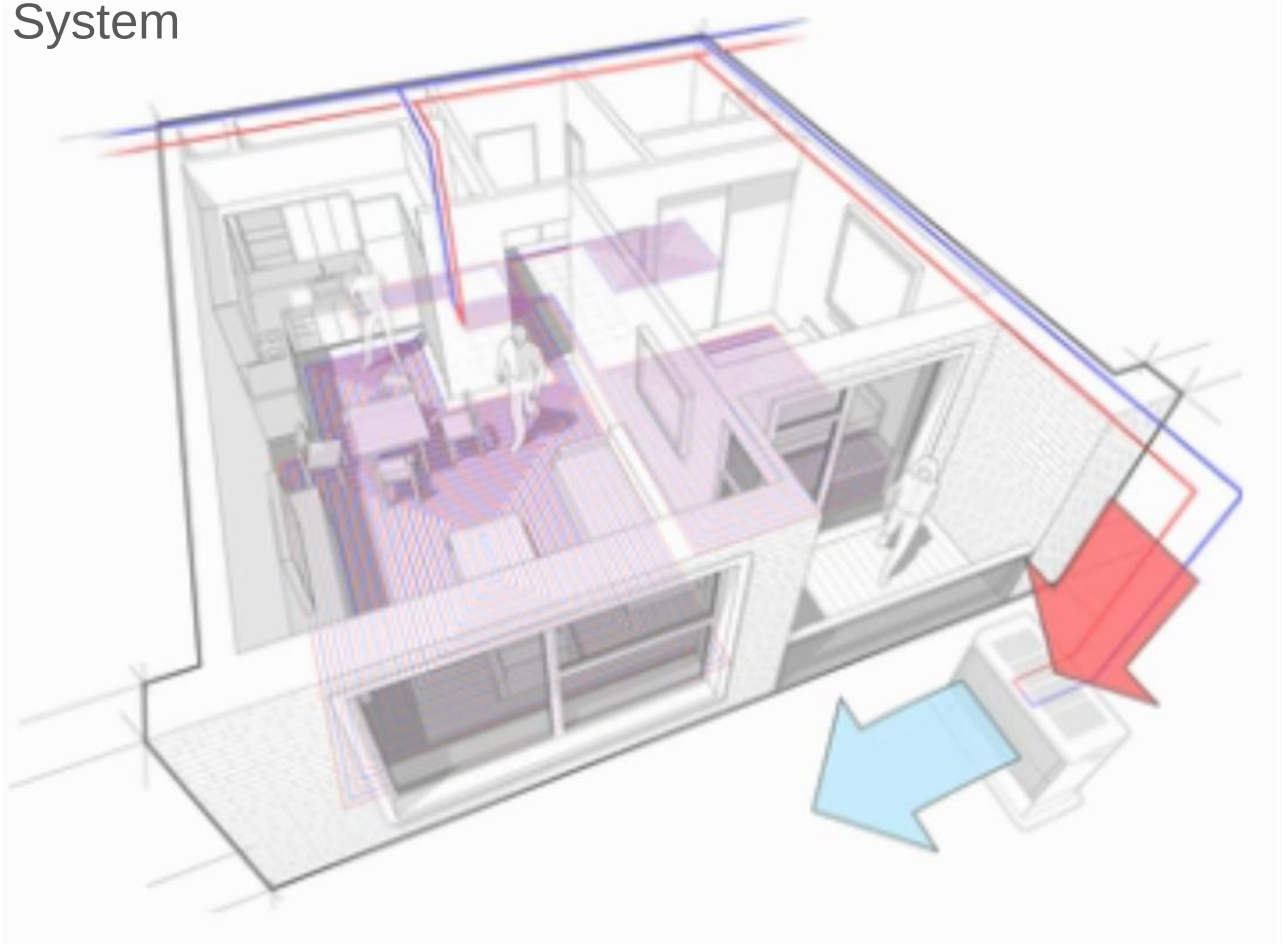
- Leak Detection and Repair
- Toilets and Urinals
- Faucets and Showerheads
- Commercial Kitchen Equipment
- Laundry Equipment
- Cooling Towners
- Steam Boiler System
- Pools and Spas
- Laboratory and Medical Equipment
- Water Metering and Submetering
- Vehicle Washing
- Single Pass Cooling System
- Landscaping and Irrigation
- On-Site Alternative Water Sources

See individual reports for specific Water Best Practices by building

BPU New Jersey's cleanenergy program™

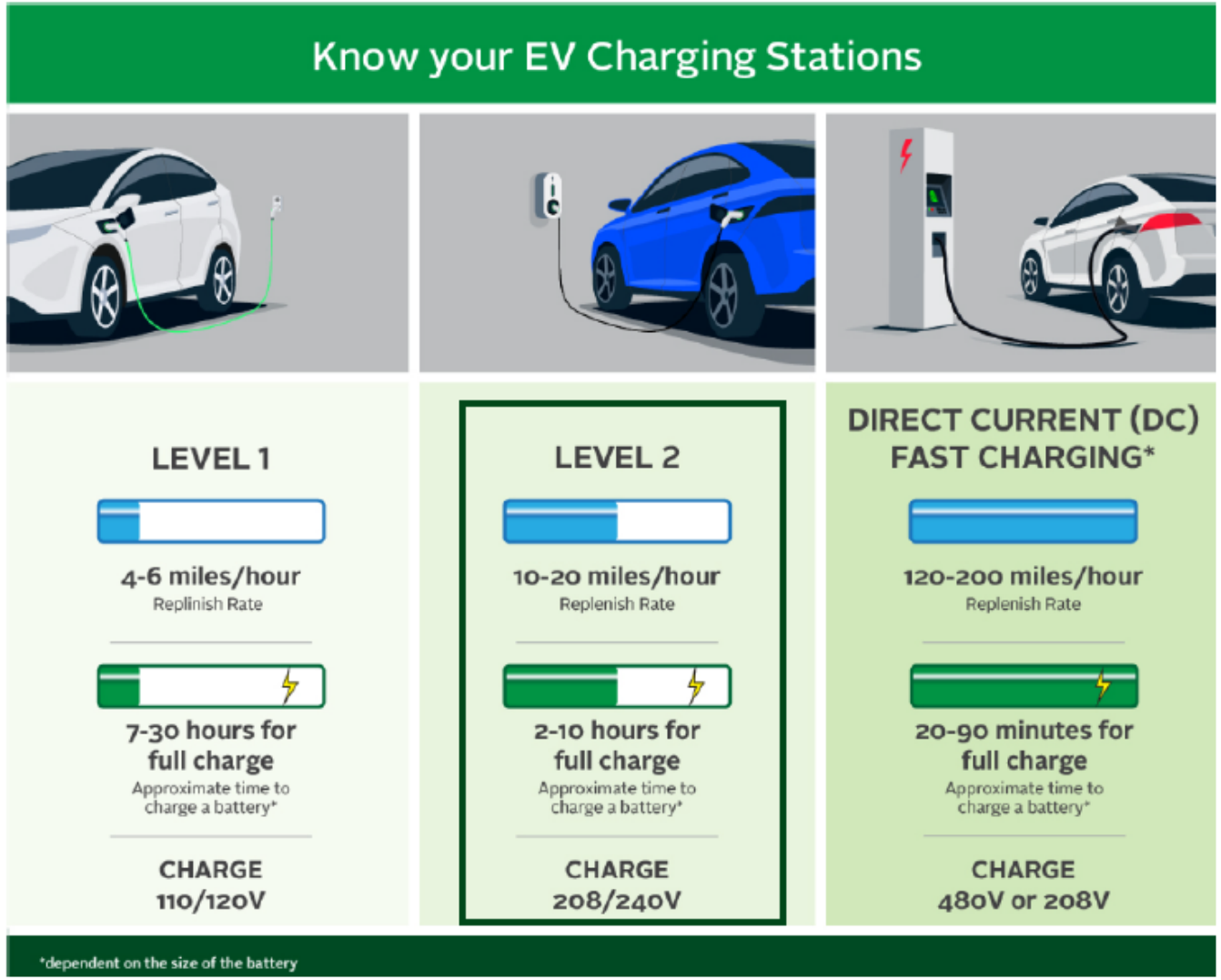
Measures for Future Consideration

- Retro-Commissioning Study
- Upgrade to a Heat Pump System
- VRF Systems



EV Charging Station Potential

NJCleanEnergy.com/EV



	Mainland RHSD
Potential:	HIGH

Solar Energy Generation Potential

NJCleanEnergy.com/renewable-energy

	Mainland RHSD
Potential:	**HIGH**
System Potential: (kW)	322
Electric Generation: (kWh per year)	383,621
Displaced Cost: (per year)	$45,270

FINANCING MECHANISM: ESIP

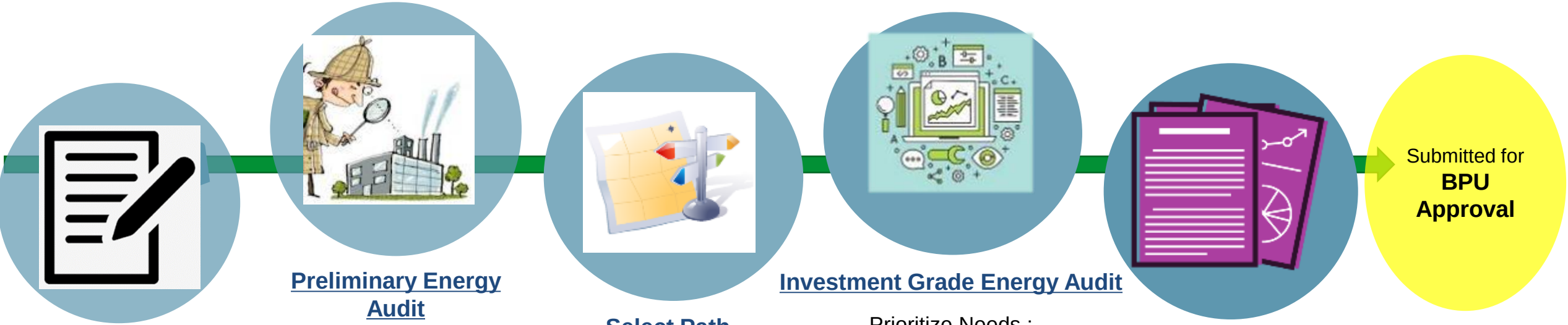
NJCleanEnergy.com/ESIP

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



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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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

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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THANK YOU