

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Monroe Township Public Library

February 19, 2020

INTRODUCTIONS

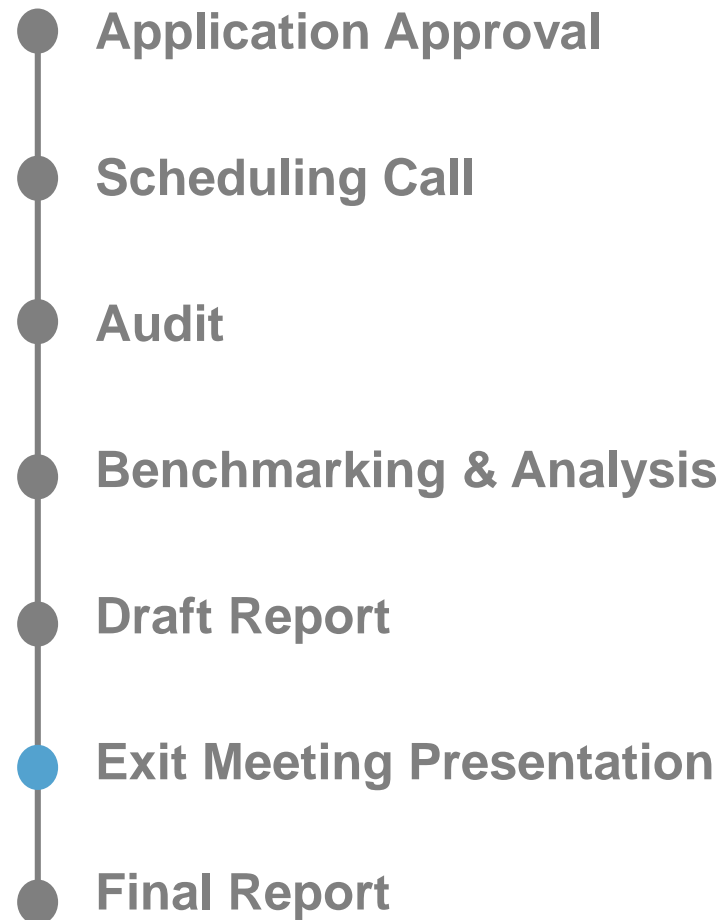
- *Monroe Township*
 - Harold Klein – Assistant to the BA
 - Leah Wanger– Library Director
 - Greg Slavicek – PWB Foreman
- *NJ Clean Energy Program*
 - Aimee Lalonde – Program Manager
 - Aditya Saxena – Energy Auditor
 - Sarah Walters – Account Manager
 - Tony O'Donnell – Outreach Account Manager



AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified
- Questions regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Monroe Township Public Library

LGEA PROCESS



MONROE TWP. PUBLIC LIBRARY

Overview of Systems, Baseline & Existing Conditions:

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

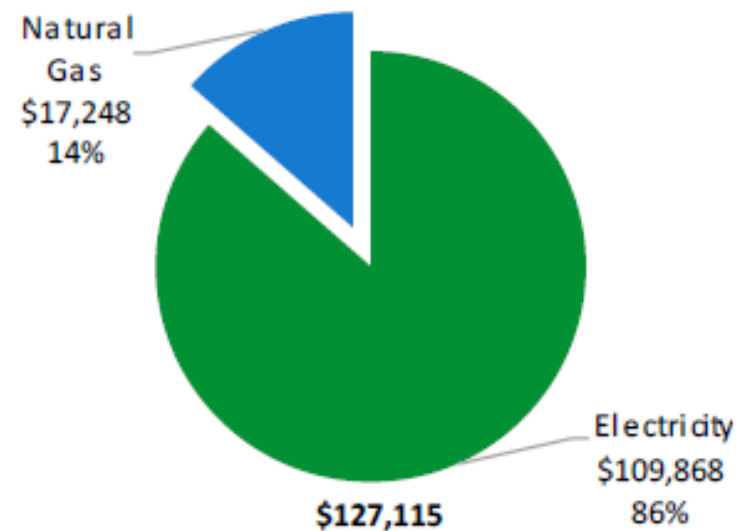
Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs


UTILITY BREAKOUT

Total Annual Energy Costs

Utility Summary		
Fuel	Usage	Cost
Electricity	792,560 kWh	\$109,868
Natural Gas	18,861 Therms	\$17,248
Total		\$127,115



BENCHMARKING

 **ENERGY STAR® Statement of Energy Performance**

N/A **Public Library**

Primary Property Type: Library
Gross Floor Area (ft²): 44,000
Built: 1997

For Year Ending: April 30, 2019
Date Generated: December 13, 2019

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 Public Library 4 Municipal Plaza Monroe Township, New Jersey 08831	Property Owner The Township of Monroe One Municipal Plaza Monroe Township, NJ 08831 (732) 521-4400	Primary Contact Haimi Levin One Municipal Plaza Monroe Township, NJ 08831 (732) 521-4400 hlevin@monroetwp.com
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Property ID: 4516243

Energy Consumption and Energy Use Intensity (EUI)


Site EUI 103.6 kBtu/ft²	Annual Energy by Fuel Natural Gas (kBtu) 1,875,694 (41%) Electric - Grid (kBtu) 2,684,282 (59%)	National Median Comparison National Median Site EUI (kBtu/ft²) 69 National Median Source EUI (kBtu/ft²) 143.6 % Diff from National Median Source EUI 50%
Source EUI 215.6 kBtu/ft²	Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 37.2	

Signature & Stamp of Verifying Professional

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

Signature: _____ Date: _____

Licensed Professional


Professional Engineer Stamp
(if applicable)

Site EUI
103.6 kBtu/ft²

Source EUI
215.6 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	69
National Median Source EUI (kBtu/ft²)	143.6
% Diff from National Median Source EUI	50%

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.

MONROE TWP PUBLIC LIBRARY – ALL OPPORTUNITIES

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			83,815	17.5	-17	\$11,462	\$18,215	\$5,996	\$12,220	1.1	82,392
ECM 1	Install LED Fixtures	Yes	18,733	5.1	-4	\$2,562	\$3,897	\$260	\$3,637	1.4	18,419
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	255	0.3	0	\$35	\$606	\$120	\$486	14.0	250
ECM 3	Retrofit Fixtures with LED Lamps	Yes	64,827	12.0	-13	\$8,865	\$13,712	\$5,616	\$8,096	0.9	63,723
Lighting Control Measures			28,840	5.2	-6	\$3,942	\$29,972	\$7,540	\$22,432	5.7	28,322
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	28,840	5.2	-6	\$3,942	\$29,972	\$7,540	\$22,432	5.7	28,322
Motor Upgrades			239	0.0	0	\$33	\$1,641	\$0	\$1,641	49.5	241
ECM 5	Premium Efficiency Motors	No	239	0.0	0	\$33	\$1,641	\$0	\$1,641	49.5	241
Variable Frequency Drive (VFD) Measures			45,359	12.2	0	\$6,288	\$39,844	\$7,700	\$32,144	5.1	45,676
ECM 6	Install VFD on Variable Air Volume (VAV) Fans	Yes	24,930	6.9	0	\$3,456	\$18,189	\$4,550	\$13,639	3.9	25,104
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	20,429	5.3	0	\$2,832	\$21,655	\$3,150	\$18,505	6.5	20,572
Electric Unitary HVAC Measures			2,134	0.4	0	\$296	\$4,109	\$0	\$4,109	13.9	2,149
ECM 8	Install High Efficiency Air Conditioning Units	No	2,134	0.4	0	\$296	\$4,109	\$0	\$4,109	13.9	2,149
Gas Heating (HVAC/Process) Replacement			0	0.0	80	\$735	\$17,282	\$3,168	\$14,114	19.2	9,411
ECM 9	Install High Efficiency Hot Water Boilers	Yes	0	0.0	80	\$735	\$17,282	\$3,168	\$14,114	19.2	9,411
HVAC System Improvements			5,311	0.0	18	\$905	\$4,078	\$0	\$4,078	4.5	7,506
ECM 10	Implement Demand Control Ventilation (DCV)	Yes	5,311	0.0	18	\$905	\$4,078	\$0	\$4,078	4.5	7,506
Domestic Water Heating Upgrade			1,308	0.0	0	\$181	\$72	\$69	\$3	0.0	1,318
ECM 11	Install Low-Flow DHW Devices	Yes	1,308	0.0	0	\$181	\$72	\$69	\$3	0.0	1,318
Food Service & Refrigeration Measures			2,639	0.3	0	\$366	\$920	\$100	\$820	2.2	2,658
ECM 12	Vending Machine Control	Yes	2,639	0.3	0	\$366	\$920	\$100	\$820	2.2	2,658
TOTALS (COST EFFECTIVE MEASURES)			167,273	35.2	75	\$23,878	\$110,384	\$24,572	\$85,812	3.6	177,283
TOTALS (ALL MEASURES)			169,647	35.6	75	\$24,207	\$116,134	\$24,572	\$91,562	3.8	179,672

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

CLEAN ENERGY PROGRAM PORTFOLIO

ELIGIBLE SECTORS

Commercial, Industrial, Government, Non-Profit, Institutional and Multifamily

INCENTIVE PROGRAMS

Equipment Rebates:

- **SmartStart**
- **Customer Tailored Energy Efficiency Pilot (CTEEP)**
- Direct Install
- Large Energy Users

Whole Buildings:

- **Pay for Performance**

Energy Generation:

- Combined Heat and Power – Fuel Cells

OTHER PROGRAMS

Renewable Energy Generation:

- **SREC Registration Program (SRP)**
- **Community Solar**

SOLAR ENERGY GENERATION POTENTIAL

Monroe Twp. Public Library	
<i>Potential:</i>	HIGH
<i>System Potential: (kW)</i>	54
<i>Electric Generation: (kWh per year)</i>	64,334
<i>Displaced Cost: (per year)</i>	\$8,920

SREC Registration Program (SRP):

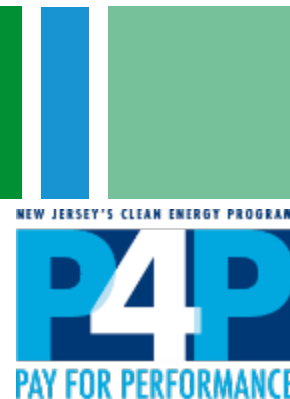
<http://www.NJCleanEnergy.com/SREC>

Community Solar Energy Pilot
Program:

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

PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



What is P4P: Comprehensive, whole-building approach to saving energy in existing or new facilities.

Qualifications: Annual peak demand 200 kW+ in the previous year for existing buildings

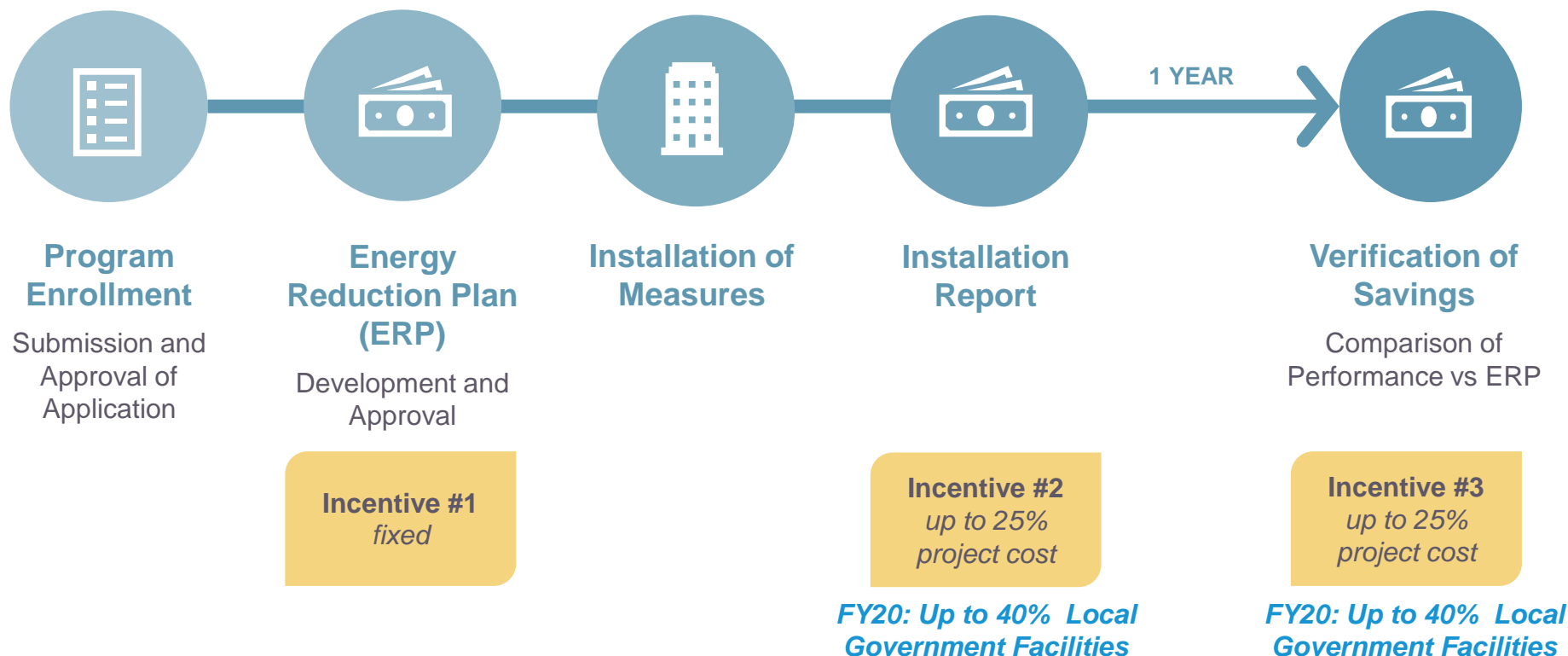
About: Customer choose from a network of pre-approved ***Participating Partners***

Incentives:

- Incentives paid in three installments
 - Up to \$2MM per project((\$4MM entity cap/year)
 - \$1 million for electric measures
 - \$1 million for gas measures
 - Up to 50% of project cost (or 80% for UEZ/OZ/Local Govt./ K-12 Public Schools)

PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



SMARTSTART

NJCleanEnergy.com/SSB

What is SSB: Individual high efficiency equipment rebates for new construction, renovation, remodeling, equipment replacement

Qualifications: • All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- Prescriptive and custom designed measures
- Pre-approval required only for lighting projects with incentives >\$100,000 and all custom projects
- For measures not requiring pre-approval, applications must be submitted to the program within one year of purchase.

Incentives:

- Prescriptive: \$500,000 cap for each electric or gas account
- Custom, lesser of the following:
 - \$0.16/kWh and/or \$1.60/Therm saved annually
 - 50% of incremental installed cost
 - Buy-down to 1 year payback based on incremental cost and savings



SMARTSTART

NJCleanEnergy.com/SSB

Prescriptive Incentives

- Lighting & Lighting Controls
- Packaged HVAC
- Boilers & Water Heaters
- Chillers
- VFD's
- Food Service
- Refrigeration

Prescriptive Only:

**DOUBLE
INCENTIVES FOR
OZ/UEZ/ LOCAL
GOVT./K-12 PUBLIC
SCHOOLS**

Custom Incentives

- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Projects must have a minimum first year energy savings of 75,000 kWh or 1,500 therms
- Project pre and post inspection required



CUSTOMER TAILORED ENERGY EFFICIENCY PILOT

NJCleanEnergy.com/CTEEP

What is CTEEP: A streamlined/single application process for participants submitting multiple different technology types.

Qualifications:

- All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- On site assistance available
- Additional technical incentive available to offset soft costs associated with developing and planning custom projects

Incentives:

- \$250,000 fiscal year entity cap
- Technical assistance incentives for custom project evaluation (up to \$10K)

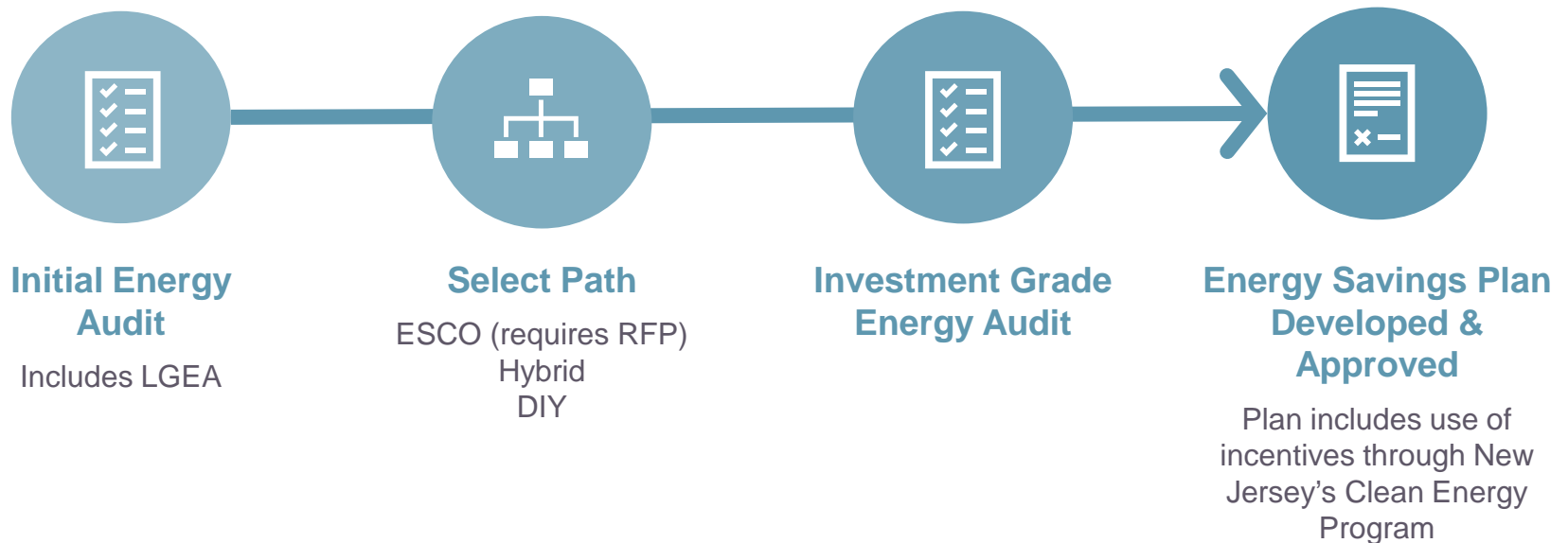
**SAME INCENTIVE
VALUES AS
SMARTSTART**

FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the BPU
- Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract
- Requires NO new bonding and is outside of capital budget
- Does not count as debt or require voter approval

FINANCING MECHANISM: ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

FOR MORE INFORMATION

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ESIP@bpu.nj.gov

FOR MORE INFORMATION

Visit NJCleanEnergy.com

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QUESTIONS

