

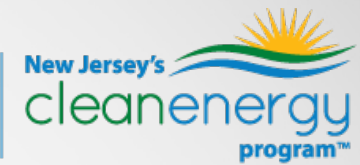
New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Lower Township MUA

TRC Energy Services

August 31, 2018

Introductions



- *Lower Township MUA*
 - Michael Chapman – Executive Director
- *Remington Vernick Engineers*
 - Dennis Yoder – Director of Engineering
 - Lia Domico – Engineering Technician
- *NJ's Clean Energy Program*
 - Brian DeLuca – Program Manager
 - Vish Nimbalker, P.E. – Lead Auditor
 - Elizabeth Ebinger – Account Manager
 - Scott Hunter – BPU Manager
 - Mike Thulen – ESIP Coordinator

Agenda

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

LGEA Process



- Application Approval
- Scheduling Call
- Audit
- Benchmarking & Analysis
- Draft Report
- Exit Meeting Presentation
- Final Report

Site Visit and Utility Analysis

Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Process Equipment

Sites Visited/Analyzed

- Wastewater Treatment Plant
- Administration Building
- Vehicle Garage
- Dewatering Building
- Pole Barn
- Blower Building

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Solar Production and Costs

Wastewater Treatment Plant



Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			155,853	13.5	\$12,669	\$32,153	\$5,970	\$26,183	2.1	156,943
ECM 1	Install LED Fixtures	Yes	87,897	7.2	\$7,145	\$15,627	\$4,000	\$11,627	1.6	88,512
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	3,862	0.3	\$314	\$1,135	\$70	\$1,065	3.4	3,889
ECM 3	Retrofit Fixtures with LED Lamps	Yes	62,708	5.8	\$5,098	\$14,316	\$1,900	\$12,416	2.4	63,146
ECM 4	Install LED Exit Signs	Yes	1,386	0.1	\$113	\$1,076	\$0	\$1,076	9.5	1,396
Lighting Control Measures			8,884	0.9	\$722	\$5,940	\$770	\$5,170	7.2	8,946
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	8,884	0.9	\$722	\$5,940	\$770	\$5,170	7.2	8,946
Motor Upgrades			533	0.1	\$43	\$3,134	\$0	\$3,134	72.3	537
	Premium Efficiency Motors	No	533	0.1	\$43	\$3,134	\$0	\$3,134	72.3	537
Variable Frequency Drive (VFD) Measures			31,172	3.7	\$2,534	\$11,424	\$0	\$11,424	4.5	31,390
ECM 6	Install VFDs on Sludge Pumps	Yes	31,172	3.7	\$2,534	\$11,424	\$0	\$11,424	4.5	31,390
Domestic Water Heating Upgrade			2,020	0.0	\$164	\$29	\$0	\$29	0.2	2,034
ECM 7	Install Low-Flow Domestic Hot Water Devices	Yes	2,020	0.0	\$164	\$29	\$0	\$29	0.2	2,034
Custom Measures			512,188	0.0	\$41,621	\$328,000	\$0	\$328,000	7.9	515,769
ECM 8	Convert to Fine Bubble Aeration	Yes	399,188	0.0	\$32,435	\$300,000	\$0	\$300,000	9.2	401,979
ECM 9	Install Automated Dissolved Oxygen (DO) Control	Yes	113,000	0.0	\$9,186	\$28,000	\$0	\$28,000	3.0	113,790
TOTALS FOR HIGH PRIORITY MEASURES			710,117	18.1	\$57,711	\$377,546	\$6,740	\$370,806	6.4	715,082
TOTALS FOR ALL EVALUATED MEASURES			710,650	18.2	\$57,754	\$380,680	\$6,740	\$373,940	6.5	715,619


* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

Wastewater Treatment Plant



Benchmarking

**ENERGY STAR® Statement of Energy Performance**
LEARN MORE AT energystar.gov

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ENERGY STAR® Score¹

Lower Township MUA Treatment Plant (Campus)
Primary Property Type: Wastewater Treatment Plant
Gross Floor Area (ft²): 35,757
Built: 1985
For Year Ending: September 30, 2017
Date Generated: June 18, 2018

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 Lower Township MUA Treatment Plant (Campus) 2900 Bayshore Road Villas, New Jersey 08251	Property Owner Lower Township Municipal Utilities Authority 2900 Bayshore Road Villas, NJ 08251 609-886-7146	Primary Contact Michael Chapman 2900 Bayshore Road Villas, NJ 08251 609-886-7146 mchapman@ltmua.org
Property ID: 6380004		

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 164.7 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison National Median Site EUI (kBtu/ft ²) 326 National Median Source EUI (kBtu/ft ²) 653.7 % Diff from National Median Source EUI -50%
	Electric - Solar (kBtu)	3,122,822 (53%)	
Source EUI 330.1 kBtu/ft ²	Electric - Grid (kBtu)	2,704,920 (47%)	Annual Emissions Greenhouse Gas Emissions (Metric Tons CO ₂ e/year) 307


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)

Wastewater Treatment Plant



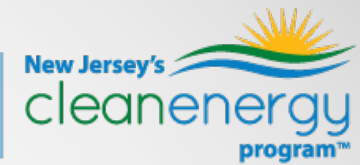
Solar Energy Generation Potential

Potential	High	
System Potential	409	kW DC STC
Electric Generation	487,270	kWh/yr
Displaced Cost	\$42,390	/yr
Installed Cost	\$1,169,700	

For more information on the SREC Registration Program (SRP) please visit:

<http://www.njcleanenergy.com/renewable-energy/programs/solar-renewable-energy-certificates-srec/new-jersey-solar-renewable-energy>

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 Retrofit
- SmartStart New Construction
- Direct Install
- Large Energy Users

Whole Buildings:

- Pay for Performance Existing Buildings
- Pay for Performance New Construction

Energy Generation:

- Combined Heat and Power (CHP)

OTHER PROGRAMS

Renewable Energy Generation:

- SREC Registration Program (SRP)

* eligible programs are highlighted in yellow

SmartStart: Overview

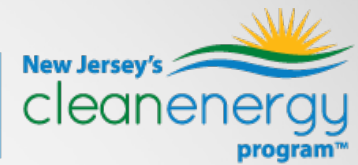


- Two types of incentives for high efficiency equipment installation:
 - Prescriptive
 - Custom
- Project Categories:
 - New Construction
 - Renovation
 - Remodeling
 - Equipment Replacement
- Project pre-approval required for lighting and custom measures
- Incentives up to \$500,000 per electric account & \$500,000 per natural gas account
- Specific incentives and individual applications for Lighting, HVAC, VFDs, Refrigeration, Controls and more!

Direct Install: Overview

- Turn-key retrofit program to replace outdated and inefficient equipment, including lighting, HVAC, refrigeration, etc.
- Open to Small to Mid-Sized Commercial and Industrial facilities with an average electric demand ≤ 200 kW
- Provides incentives of up to 70% of the installed cost
- Incentives are paid directly to the contractor
 - Customer only pays remaining 30% of installed cost
 - \$125,000 project/building cap
 - \$250,000 per entity cap (up to \$500,000 if using ESIP)
- Participating contractors provide support and process all paperwork
- Fast turnaround time: Average length of time for job completion (4-6 months)

Direct Install:



Participating Contractor

Hutchinson Mechanical Services

Ed Hutchinson

856-429-5828 x215

edhutchinson@hutchbiz.com

Energy Savings Improvement Program (ESIP)

- Provides alternative financing for energy savings projects at public institutions. Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract. Does not count as debt/require voter approval.
- Requires an audit as 1st step (LGEA satisfies requirement)
- ESIP participation question on LGEA application
- Program administered directly by BPU

ESIP Process

New Jersey's Clean Energy Program Interaction

Initial Energy Audit completed
for entity building(s)

Local Government Energy Audit
(LGEA) may be used to meet
this requirement

Entity issues ESIP RFP (previously
approved by BPU) and selects ESCO
or DIY approach

Investment Grade Energy Audit completed
and Energy Savings Plan (ESP)
developed

P4P Energy Reduction Plan (ERP),
Direct Install, or SmartStart application
recommended submittal time frame

Third party review of ESP

Review and approval of ESP
by Board of Public Utilities (BPU)

Entity adopts ESP,
determines guarantee



FOR MORE INFORMATION

ESIP

Mike Thulen

ESIP Coordinator

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ESIP@bpu.nj.gov

Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

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