

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Musconetcong Sewerage Authority

Alex Klieverik, TRC

April 23, 2018

Introductions



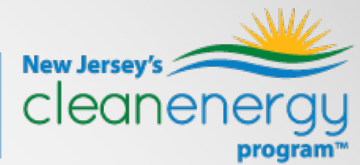
- *Musconetcong Sewerage Authority*
 - Facility Director: James Schilling
 - PS&S Engineer: James Wancho
- *NJ Clean Energy Program – TRC*
 - Auditor: Alex Klieverik
 - Outreach Manager: Jim Friedl
 - Case Manager: Amanda Muench

Agenda



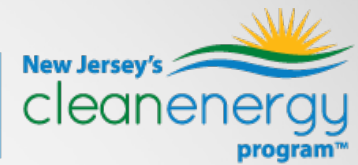
- Overview of LGEA process (application to deliverable)
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**asures (ECMs) identified
- Questions or concerns regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Musconetcong Sewerage Authority

Process to Draft Report



- Application submitted to NJCEP
- Site Visit Performed
- Utility Analysis
- Baseline Condition
- Analysis
- Recommendations
- Report

Pump Station 1 - 6



Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Pump Stations 1 - 6

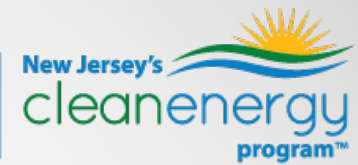


Energy Conservation Measure		Recommend?	Annual Electric Savings (kWh)	Peak Dem and Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			1,655	3.3	0.0	\$205.12	\$10,139.85	\$1,835.00	\$8,304.85	40.5	1,667
	Install LED Fixtures	No	457	0.9	0.0	\$56.68	\$5,469.48	\$1,400.00	\$4,069.48	71.8	461
	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	No	431	0.8	0.0	\$53.38	\$2,340.00	\$200.00	\$2,140.00	40.1	434
	Retrofit Fixtures with LED Lamps	No	767	1.5	0.0	\$95.06	\$2,330.37	\$235.00	\$2,095.37	22.0	772
Lighting Control Measures			117	0.2	0.0	\$14.47	\$3,240.00	\$420.00	\$2,820.00	194.8	118
	Install Occupancy Sensor Lighting Controls	No	117	0.2	0.0	\$14.47	\$3,240.00	\$420.00	\$2,820.00	194.8	118
Domestic Water Heating Upgrade			421	0.0	0.0	\$52.15	\$7.17	\$0.00	\$7.17	0.1	424
ECM 1	Install Low-Flow Domestic Hot Water Devices	Yes	421	0.0	0.0	\$52.15	\$7.17	\$0.00	\$7.17	0.1	424
TOTALS FOR ALL RECOMMENDED MEASURES			421	0.0	0.0	\$52.15	\$7.17	\$0.00	\$7.17	0.1	424
TOTALS FOR ALL MEASURES			2,193	3.5	0.0	\$271.75	\$13,387.02	\$2,255.00	\$11,132.02	41.0	2,208

* - All incentives presented in this table are based on N.J. 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).

Main Treatment Plant



Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

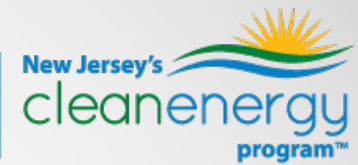
Main Treatment Plant



Energy Conservation Measure		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		110,140	46.0	0.0	\$13,171.58	\$193,802.57	\$14,535.00	\$179,267.57	13.6	110,910
ECM 1	Install LED Fixtures	49,617	8.2	0.0	\$5,933.72	\$110,540.42	\$6,700.00	\$103,840.42	17.5	49,964
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	57,262	37.3	0.0	\$6,848.00	\$80,519.67	\$7,800.00	\$72,719.67	10.6	57,663
ECM 3	Retrofit Fixtures with LED Lamps	211	0.3	0.0	\$25.25	\$376.27	\$35.00	\$341.27	13.5	213
ECM 4	Install LED Exit Signs	3,049	0.3	0.0	\$364.61	\$2,366.21	\$0.00	\$2,366.21	6.5	3,070
Lighting Control Measures		7,018	4.5	0.0	\$839.28	\$15,660.00	\$1,890.00	\$13,770.00	16.4	7,067
ECM 5	Install Occupancy Sensor Lighting Controls	7,018	4.5	0.0	\$839.28	\$15,660.00	\$1,890.00	\$13,770.00	16.4	7,067
Motor Upgrades		86,418	8.8	0.0	\$10,334.69	\$26,944.00	\$0.00	\$26,944.00	2.6	87,022
ECM 6	Premium Efficiency Motors	86,418	8.8	0.0	\$10,334.69	\$26,944.00	\$0.00	\$26,944.00	2.6	87,022
Gas Heating (HVAC/Process) Replacement		0	0.0	89.1	\$857.83	\$12,384.25	\$966.00	\$11,418.25	13.3	12,615
ECM 7	Install High Efficiency Hot Water Boilers	0	0.0	89.1	\$857.83	\$12,384.25	\$966.00	\$11,418.25	13.3	12,615
Domestic Water Heating Upgrade		1,725	0.0	0.0	\$206.34	\$271.81	\$0.00	\$271.81	1.3	1,737
ECM 8	Install Low-Flow Domestic Hot Water Devices	1,725	0.0	0.0	\$206.34	\$271.81	\$0.00	\$271.81	1.3	1,737
TOTALS		205,301	59.3	89.1	\$25,409.73	\$249,062.63	\$17,391.00	\$231,671.63	9.1	219,352

* - 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).



Some Energy Efficient 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

PROGRAM PORTFOLIO



ELIGIBLE SECTORS

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

PROGRAMS

Equipment Rebates:

- Retrofit – Existing Buildings
- New Construction
- Direct Install – Small Business
- Large Energy Users

Whole Buildings:

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

Energy Generation:

- Combined Heat and Power (CHP) and Fuel Cells

Recommended NJCEP Incentives



➤ Direct Install

Donnelly Energy

Justin Avallone

845-401-6253

javallone@donnellyenergy.com

➤ SmartStart Buildings (i.e Retrofit – Existing Buildings)

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 a peak 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 cap
 - \$250,000 per entity cap
- Participating contractors provide support and process all paperwork
- Fast turnaround time: Average length of time for job completion (4-6 months)

SmartStart Prescriptive: Overview



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

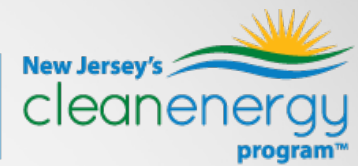
Energy Savings Improvement Program (ESIP)

- 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

Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

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