

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Stratford Board of Education

Moussa Traore, TRC

April 18, 2018

Meeting Setup



1) Dial the following:

1-877-304-9323

2) When prompted, enter the code below:

5391398#

Introductions



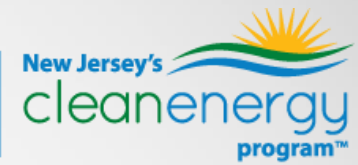
- *Stratford Board of Education*
 - Jerry Furman – Supervisor of Operations
- *NJ Clean Energy Program – TRC*
 - Moussa Traore – Auditor
 - Jim Friedl – Outreach Manager

Agenda



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

Process to Draft Report



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



Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- On-Site Generation Measures (Solar)

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Parkview Elementary School



Energy Conservation Measure		Recommend?	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			102,719	23.3	0.0	\$15,674.82	\$65,440.44	\$10,570.00	\$54,870.44	3.5	103,438
ECM 1	Install LED Fixtures	Yes	44,049	8.0	0.0	\$6,721.82	\$26,626.65	\$3,800.00	\$22,826.65	3.4	44,357
ECM 2	Retrofit Fixtures with LED Lamps	Yes	58,670	15.3	0.0	\$8,953.00	\$38,813.79	\$6,770.00	\$32,043.79	3.6	59,081
Lighting Control Measures			14,971	4.0	0.0	\$2,284.53	\$13,698.00	\$1,785.00	\$11,913.00	5.2	15,076
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	13,566	3.6	0.0	\$2,070.18	\$11,698.00	\$1,785.00	\$9,913.00	4.8	13,661
ECM 4	Install High/Low Lighting Controls	Yes	1,405	0.4	0.0	\$214.36	\$2,000.00	\$0.00	\$2,000.00	9.3	1,415
Electric Unitary HVAC Measures			4,788	5.3	0.0	\$730.58	\$47,648.16	\$1,932.00	\$45,716.16	62.6	4,821
	Install High Efficiency Electric AC	No	4,788	5.3	0.0	\$730.58	\$47,648.16	\$1,932.00	\$45,716.16	62.6	4,821
HVAC System Improvements			6,864	1.5	0.0	\$1,047.43	\$2,500.00	\$1,250.00	\$1,250.00	1.2	6,912
ECM 5	Install Dual Enthalpy Outside Economizer Control	Yes	6,864	1.5	0.0	\$1,047.43	\$2,500.00	\$1,250.00	\$1,250.00	1.2	6,912
Domestic Water Heating Upgrade			1,998	0.0	14.8	\$447.09	\$121.89	\$0.00	\$121.89	0.3	3,750
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	1,998	0.0	14.8	\$447.09	\$121.89	\$0.00	\$121.89	0.3	3,750
Plug Load Equipment Control - Vending Machine			1,612	0.0	0.0	\$245.96	\$230.00	\$0.00	\$230.00	0.9	1,623
ECM 7	Vending Machine Control	Yes	1,612	0.0	0.0	\$245.96	\$230.00	\$0.00	\$230.00	0.9	1,623
TOTALS FOR RECOMMENDED MEASURES			128,164	28.9	14.8	19,699.8	81,990.3	13,605.0	68,385.3	3.5	130,798.1
TOTALS FOR EVALUATED MEASURES			132,952	34.2	14.8	\$20,430.43	\$129,638.49	\$15,537.00	\$114,101.49	5.6	135,619

* - 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).

On-Site Generation Measures (Solar)



TRC Energy Services evaluated the potential for installing on-site generation for Parkview Elementary School. Based on the configuration of the site and its loads there is a high potential for installing a photovoltaic (PV) array.

For more information on solar PV technology and commercial solar markets in New Jersey, or to find a qualified solar installer, who can provide a more detailed assessment of the specific costs and benefits of solar develop of the site, please visit the following links below:

- Basic Info on Solar PV in NJ: <http://www.njcleanenergy.com/whysolar>
- NJ Solar Market FAQs: <http://www.njcleanenergy.com/renewable-energy/program-updates-and-background-information/solar-transition/solar-market-faqs>
- Approved Solar Installers in the NJ Market: http://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/tools-and-resources/tradeally/approved_vendorsearch/?id=60&start=1

Potential	High	
System Potential	142	kW DC STC
Electric Generation	169,175	kWh/yr
Displaced Cost	\$14,720	/yr
Installed Cost	\$369,200	

Overview of Systems, Baseline & Existing Conditions:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- On-Site Generation Measures (Solar)

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Samuel S. Yellin Middle School



Energy Conservation Measure		Recommend?	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			161,245	37.3	0.0	\$24,572.30	\$105,794.92	\$15,885.00	\$89,909.92	3.7	162,373
ECM 1	Install LED Fixtures	Yes	54,658	9.7	0.0	\$8,329.41	\$41,170.00	\$4,920.00	\$36,250.00	4.4	55,040
ECM 2	Retrofit Fixtures with LED Lamps	Yes	106,587	27.6	0.0	\$16,242.89	\$64,624.92	\$10,965.00	\$53,659.92	3.3	107,332
Lighting Control Measures			19,121	5.2	0.0	\$2,913.89	\$20,182.00	\$3,005.00	\$17,177.00	5.9	19,255
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	19,121	5.2	0.0	\$2,913.89	\$19,256.00	\$2,880.00	\$16,376.00	5.6	19,255
Variable Frequency Drive (VFD) Measures			5,713	1.0	0.0	\$870.61	\$13,065.91	\$0.00	\$13,065.91	15.0	5,753
	Install VFDs on Hot Water Pumps	No	5,713	1.0	0.0	\$870.61	\$13,065.91	\$0.00	\$13,065.91	15.0	5,753
Electric Unitary HVAC Measures			74,925	64.4	0.0	\$11,417.83	\$146,451.15	\$6,894.00	\$139,557.15	12.2	75,449
ECM 4	Install High Efficiency Electric AC	Yes	74,925	64.4	0.0	\$11,417.83	\$146,451.15	\$6,894.00	\$139,557.15	12.2	75,449
HVAC System Improvements			15,796	3.6	0.0	\$2,407.18	\$5,750.00	\$2,750.00	\$3,000.00	1.2	15,907
ECM 5	Install Dual Enthalpy Outside Economizer Control	Yes	15,796	3.6	0.0	\$2,407.18	\$5,750.00	\$2,750.00	\$3,000.00	1.2	15,907
Domestic Water Heating Upgrade			2,997	0.0	40.1	\$820.13	\$4,973.94	\$300.00	\$4,673.94	5.7	7,718
	Install Tankless Water Heater	No	0	0.0	15.9	\$143.54	\$4,780.35	\$300.00	\$4,480.35	31.2	1,856
ECM 6	Install Low-Flow Domestic Hot Water Devices	Yes	2,997	0.0	24.3	\$676.59	\$193.59	\$0.00	\$193.59	0.3	5,862
Plug Load Equipment Control - Vending Machine			3,224	0.0	0.0	\$491.26	\$460.00	\$0.00	\$460.00	0.9	3,246
ECM 7	Vending Machine Control	Yes	3,224	0.0	0.0	\$491.26	\$460.00	\$0.00	\$460.00	0.9	3,246
TOTALS FOR RECOMMENDED MEASURES			277,308	110	24	\$42,479.04	\$278,831.66	\$28,534.00	\$250,297.66	5.9	282,091
TOTALS FOR ALL EVALUATED MEASURES			283,021	111.4	40.1	\$43,493.19	\$296,677.92	\$28,834.00	\$267,843.92	6.2	289,700

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On-Site Generation Measures (Solar)

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Potential	High	
System Potential	240	kW DC STC
Electric Generation	285,929	kWh/yr
Displaced Cost	\$24,880	/yr
Installed Cost	\$624,000	

Some Energy Efficient Practices

- Reduce Air Leakage
- Ensure Lighting Controls Are Operating Properly
- Use Fans to Reduce Cooling Load
- Clean and/or Replace HVAC filters
- Perform Proper Boiler Maintenance
- Perform Proper Water Heater Maintenance
- 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

Hutchinson Mechanical Services

Ed Hutchinson

856-429-5828 x215

edhutchinson@hutchbiz.com

➤ Pay for Performance (P4P)

➤ 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 (\$500,000 if utilizing ESIP)
- Participating contractors provide support and process all paperwork
- Fast turnaround time: Average length of time for job completion (4-6 months)

South Jersey Gas Financing

Direct Install

The State of NJ pays:

- ❑ 70% of all qualified upgrades
- ❑ Up to \$125,000

South Jersey Gas will finance:

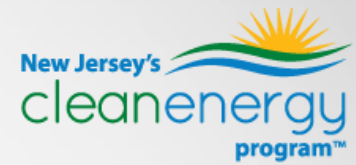
- ❑ Remaining 30%
- ❑ 0% financing
- ❑ For 3 years
- ❑ Up to \$53,571

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!

P4P Existing Buildings: Overview



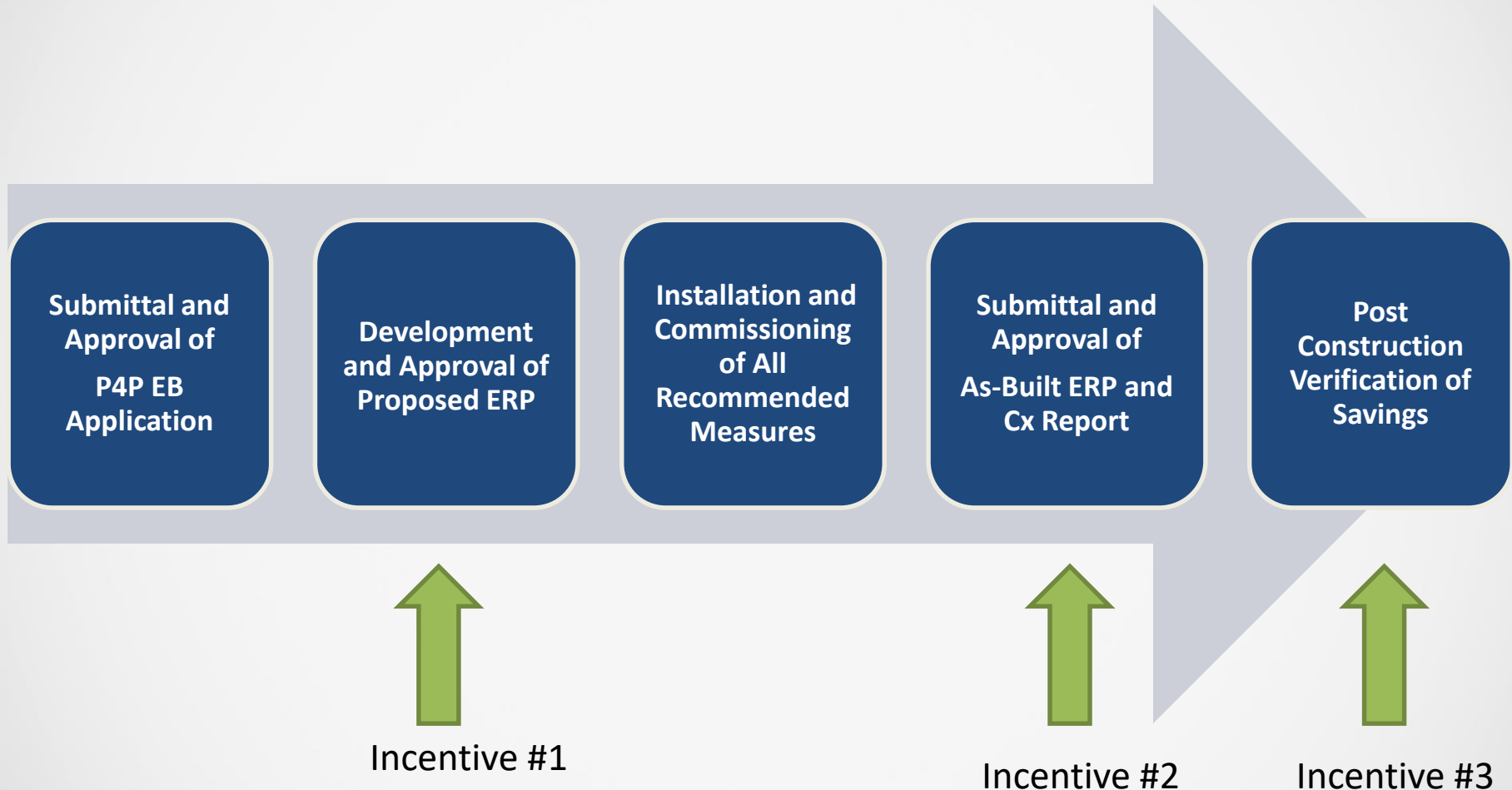
- Comprehensive, whole-building approach to saving energy in existing or new facilities
- Customer chooses from network of pre-approved participating Partners (including DCO)
- Incentives up to \$2 million per project
 - \$1 million for electric measures
 - \$1 million for gas measures
- \$4 million annual entity cap per fiscal year
- Incentives up to 50% of total project cost
- Incentives paid in three installments at milestones

P4P Existing Buildings: Overview



- Open to Commercial and Industrial facilities with annual peak demand of at least 200 kW in previous year
- Minimum savings 15% from existing energy use
- Must have at least two unique measures per project
- No more than 50% of total savings may come from lighting measures
 - Lighting savings up to 70% may be considered with minimum savings target increasing up to 35%

P4P Existing Buildings: Process



P4P Existing Buildings: Incentives



Incentive #1: Energy Reduction Plan			
Incentive Amount:		\$0.15	per sq ft
Minimum Incentive:		\$7,500	
Maximum Incentive:		\$50,000	or 50% of facility annual energy cost
Incentive #2: Installation of Recommended Measures			
Minimum Performance Target:		15%	
Electric Incentives	Base Incentive based on 15% savings:	\$0.09	per projected kWh saved
	For each % over 15% add:	\$0.005	
	Maximum Incentive:	\$0.11	
Gas Incentives	Base Incentive based on 15 % savings:	\$0.90	per projected Therm saved
	For each % over 15% add:	\$0.05	
	Maximum Incentive:	\$1.25	
Incentive Cap:		25%	of total project cost
Incentive #3: Post-Construction Benchmarking Report			
Minimum Performance Target:		15%	
Electric Incentives	Base Incentive based on 15% savings:	\$0.09	per projected kWh saved
	For each % over 15% add:	\$0.005	
	Maximum Incentive:	\$0.11	
Gas Incentives	Base Incentive based on 15% savings:	\$0.90	per projected Therm saved
	For each % over 15% add:	\$0.05	
	Maximum Incentive:	\$1.25	
Incentive Cap:		25%	of total project cost

South Jersey Gas Financing

SmartStart Buildings & Pay for Performance Programs

- ☐ 0% Financing
- ☐ Up to \$100,000 for 5 years
- ☐ SJG can help guide you through the process

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

FOR MORE INFORMATION

ESIP

Mike Thulen

ESIP Coordinator

Office: 609-777-3338

Cell: 732-330-2419

ESIP@bpu.nj.gov

Questions



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

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