



# New Jersey's Clean Energy Program

LGEA Exit Meeting for  
Foundation Academy Charter School  
(NPFACS)

Moussa Traore, TRC

12/22/2016

# Meeting Setup

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***1) Dial the following:***

1-877-304-9323

***2) When prompted, enter the code below:***

9330749#

# Introductions



- *Foundation Academy Charter School*
  - Graig Weiss
  - Kendra Thatcher
  
- *NJ Clean Energy Program – TRC*
  - Auditor: Moussa Traore
  - Case Manager: Ashely Miller
  - Outreach Manager: Jim Friedl

# Agenda

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- 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 *Foundation Academy Charter School*

# Process to Draft Report



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

# *(1) Foundation Academy Charter School*



## **Overview of Systems, Baseline & Existing Conditions (page 12):**

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems

## **Utility Consumption (page 7):**

- Electric Consumption and Spend
- Gas Consumption and Spend

# (1) Foundation Academy Charter 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			<b>176,370</b>	<b>42.8</b>	<b>0.0</b>	<b>\$23,987.27</b>	<b>\$152,960.73</b>	<b>\$16,030.00</b>	<b>\$136,930.73</b>	<b>5.71</b>	<b>177,603</b>
ECM 1	Install LED Fixtures	Yes	52,819	15.8	0.0	\$7,183.70	\$67,575.32	\$5,945.00	\$61,630.32	8.58	53,189
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	32,279	5.8	0.0	\$4,390.13	\$31,196.80	\$435.00	\$30,761.80	7.01	32,505
ECM 3	Retrofit Fixtures with LED Lamps	Yes	88,133	20.9	0.0	\$11,986.61	\$49,348.63	\$9,650.00	\$39,698.63	3.31	88,750
ECM 4	Install LED Exit Signs	Yes	3,138	0.2	0.0	\$426.83	\$4,839.98	\$0.00	\$4,839.98	11.34	3,160
<b>Lighting Control Measures</b>			<b>23,164</b>	<b>5.5</b>	<b>0.0</b>	<b>\$3,150.39</b>	<b>\$10,208.00</b>	<b>\$1,760.00</b>	<b>\$8,448.00</b>	<b>2.68</b>	<b>23,326</b>
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	23,164	5.5	0.0	\$3,150.39	\$10,208.00	\$1,760.00	\$8,448.00	2.68	23,326
<b>Motor Upgrades</b>			<b>28</b>	<b>0.0</b>	<b>0.0</b>	<b>\$3.77</b>	<b>\$532.17</b>	<b>\$0.00</b>	<b>\$532.17</b>	<b>141.15</b>	<b>28</b>
ECM 6	Premium Efficiency Motors	Yes	28	0.0	0.0	\$3.77	\$532.17	\$0.00	\$532.17	141.15	28
<b>Variable Frequency Drive (VFD) Measures</b>			<b>39,009</b>	<b>46.0</b>	<b>0.0</b>	<b>\$5,305.38</b>	<b>\$43,712.98</b>	<b>\$11,600.00</b>	<b>\$32,112.98</b>	<b>6.05</b>	<b>39,281</b>
ECM 7	Install VFD on Variable Air Volume (VAV) HVAC	Yes	39,009	46.0	0.0	\$5,305.38	\$43,712.98	\$11,600.00	\$32,112.98	6.05	39,281
<b>Gas Heating (HVAC/Process) Replacement</b>			<b>0</b>	<b>0.0</b>	<b>7.0</b>	<b>\$49.45</b>	<b>\$1,256.50</b>	<b>\$0.00</b>	<b>\$1,256.50</b>	<b>25.41</b>	<b>814</b>
ECM 8	Install High Efficiency Unit Heaters	Yes	0	0.0	7.0	\$49.45	\$1,256.50	\$0.00	\$1,256.50	25.41	814
<b>Domestic Water Heating Upgrade</b>			<b>0</b>	<b>0.0</b>	<b>119.2</b>	<b>\$848.01</b>	<b>\$748.35</b>	<b>\$0.00</b>	<b>\$748.35</b>	<b>0.88</b>	<b>13,962</b>
ECM 9	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	119.2	\$848.01	\$748.35	\$0.00	\$748.35	0.88	13,962
<b>Food Service Equipment &amp; Refrigeration Measures</b>			<b>3,500</b>	<b>0.0</b>	<b>0.0</b>	<b>\$157.00</b>	<b>\$1,100.00</b>	<b>\$320.00</b>	<b>\$780.00</b>	<b>4.97</b>	<b>3,524</b>
ECM 10	Refrigeration Controls	Yes	3,500	0.0	0.0	\$157.00	\$1,100.00	\$320.00	\$780.00	4.97	3,524
<b>Plug Load Equipment Control - Vending Machine</b>			<b>1,954</b>	<b>0.0</b>	<b>0.0</b>	<b>\$265.80</b>	<b>\$1,437.60</b>	<b>\$0.00</b>	<b>\$1,437.60</b>	<b>5.41</b>	<b>1,968</b>
ECM 11	Vending Machine Control	Yes	1,954	0.0	0.0	\$265.80	\$1,437.60	\$0.00	\$1,437.60	5.41	1,968
<b>TOTALS</b>			<b>244,024</b>	<b>94.3</b>	<b>126.2</b>	<b>\$33,767.07</b>	<b>\$211,956.34</b>	<b>\$29,710.00</b>	<b>\$182,246.34</b>	<b>5.40</b>	<b>260,507</b>

\* - 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).

## *(2) Foundation Collegiate Academy*



### **Overview of Systems, Baseline & Existing Conditions (page 11):**

- Building Envelope
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### **Utility Consumption (page 7):**

- Electric Consumption and Spend
- Gas Consumption and Spend



# (2) Foundation Collegiate Academy



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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			<b>64,464</b>	<b>12.4</b>	<b>0.0</b>	<b>\$10,185.48</b>	<b>\$46,619.26</b>	<b>\$6,670.00</b>	<b>\$39,949.26</b>	<b>3.92</b>	<b>64,915</b>
ECM 1	Install LED Fixtures	Yes	23,324	3.6	0.0	\$3,685.28	\$10,232.28	\$2,190.00	\$8,042.28	2.18	23,487
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,127	0.1	0.0	\$178.11	\$567.30	\$0.00	\$567.30	3.19	1,135
ECM 3	Retrofit Fixtures with LED Lamps	Yes	38,341	8.6	0.0	\$6,058.03	\$33,023.25	\$4,480.00	\$28,543.25	4.71	38,609
ECM 4	Install LED Exit Signs	Yes	1,671	0.1	0.0	\$264.07	\$2,796.43	\$0.00	\$2,796.43	10.59	1,683
<b>Lighting Control Measures</b>			<b>10,810</b>	<b>2.4</b>	<b>0.0</b>	<b>\$1,708.00</b>	<b>\$4,060.00</b>	<b>\$700.00</b>	<b>\$3,360.00</b>	<b>1.97</b>	<b>10,886</b>
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	10,810	2.4	0.0	\$1,708.00	\$4,060.00	\$700.00	\$3,360.00	1.97	10,886
<b>Motor Upgrades</b>			<b>9,190</b>	<b>3.6</b>	<b>0.0</b>	<b>\$1,452.03</b>	<b>\$2,074.80</b>	<b>\$0.00</b>	<b>\$2,074.80</b>	<b>1.43</b>	<b>9,254</b>
ECM 6	Premium Efficiency Motors	Yes	9,190	3.6	0.0	\$1,452.03	\$2,074.80	\$0.00	\$2,074.80	1.43	9,254
<b>Variable Frequency Drive (VFD) Measures</b>			<b>12,086</b>	<b>1.7</b>	<b>0.0</b>	<b>\$1,909.62</b>	<b>\$3,807.95</b>	<b>\$1,200.00</b>	<b>\$2,607.95</b>	<b>1.37</b>	<b>12,171</b>
ECM 7	Install VFDs on Boiler Feedwater Pumps	Yes	12,086	1.7	0.0	\$1,909.62	\$3,807.95	\$1,200.00	\$2,607.95	1.37	12,171
<b>Electric Unitary HVAC Measures</b>			<b>680</b>	<b>0.7</b>	<b>0.0</b>	<b>\$107.50</b>	<b>\$4,355.04</b>	<b>\$0.00</b>	<b>\$4,355.04</b>	<b>40.51</b>	<b>685</b>
ECM 8	Install High Efficiency Electric AC	Yes	680	0.7	0.0	\$107.50	\$4,355.04	\$0.00	\$4,355.04	40.51	685
<b>Domestic Water Heating Upgrade</b>			<b>0</b>	<b>0.0</b>	<b>35.0</b>	<b>\$295.07</b>	<b>\$179.25</b>	<b>\$0.00</b>	<b>\$179.25</b>	<b>0.61</b>	<b>4,094</b>
ECM 9	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	35.0	\$295.07	\$179.25	\$0.00	\$179.25	0.61	4,094
<b>TOTALS</b>			<b>97,230</b>	<b>20.7</b>	<b>35.0</b>	<b>\$15,657.71</b>	<b>\$61,096.30</b>	<b>\$8,570.00</b>	<b>\$52,526.30</b>	<b>3.35</b>	<b>102,004</b>

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## *(3) Foundation Collegiate Academy Gym*



### **Overview of Systems, Baseline & Existing Conditions (page 11):**

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems

### **Utility Consumption (page 7):**

- Electric Consumption and Spend
- Gas Consumption and Spend

# (3) Foundation Collegiate Academy Gym



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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			<b>36,319</b>	<b>10.7</b>	<b>0.0</b>	<b>\$5,938.46</b>	<b>\$72,135.60</b>	<b>\$6,975.00</b>	<b>\$65,160.60</b>	<b>10.97</b>	<b>36,573</b>
ECM 1	Install LED Fixtures	Yes	31,519	9.4	0.0	\$5,153.55	\$66,986.73	\$6,570.00	\$60,416.73	11.72	31,739
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	2,049	0.6	0.0	\$335.08	\$2,861.65	\$15.00	\$2,846.65	8.50	2,064
ECM 3	Retrofit Fixtures with LED Lamps	Yes	2,429	0.7	0.0	\$397.13	\$1,857.00	\$390.00	\$1,467.00	3.69	2,446
ECM 4	Install LED Exit Signs	Yes	322	0.0	0.0	\$52.71	\$430.22	\$0.00	\$430.22	8.16	325
<b>Lighting Control Measures</b>			<b>1,061</b>	<b>0.3</b>	<b>0.0</b>	<b>\$173.52</b>	<b>\$1,044.00</b>	<b>\$180.00</b>	<b>\$864.00</b>	<b>4.98</b>	<b>1,069</b>
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	1,061	0.3	0.0	\$173.52	\$1,044.00	\$180.00	\$864.00	4.98	1,069
<b>Variable Frequency Drive (VFD) Measures</b>			<b>14,037</b>	<b>3.9</b>	<b>0.0</b>	<b>\$2,295.23</b>	<b>\$3,807.95</b>	<b>\$1,200.00</b>	<b>\$2,607.95</b>	<b>1.14</b>	<b>14,136</b>
ECM 6	Install VFD on Variable Air Volume (VAV) HVAC	Yes	14,037	3.9	0.0	\$2,295.23	\$3,807.95	\$1,200.00	\$2,607.95	1.14	14,136
<b>Domestic Water Heating Upgrade</b>			<b>0</b>	<b>0.0</b>	<b>13.2</b>	<b>\$120.90</b>	<b>\$298.89</b>	<b>\$0.00</b>	<b>\$298.89</b>	<b>2.47</b>	<b>1,548</b>
ECM 7	Install Low-Flow Domestic Hot Water Devices	Yes	0	0.0	13.2	\$120.90	\$298.89	\$0.00	\$298.89	2.47	1,548
<b>TOTALS</b>			<b>51,418</b>	<b>15.0</b>	<b>13.2</b>	<b>\$8,528.11</b>	<b>\$77,286.44</b>	<b>\$8,355.00</b>	<b>\$68,931.44</b>	<b>8.08</b>	<b>53,325</b>

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## *Some Energy Efficient Practices*

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- 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

Tri-State Light & Energy, Inc.

Alan Rhode

610-789-1900 x226

[asr@tsle.com](mailto:asr@tsle.com)

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

# Questions

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# FOR MORE INFORMATION

**Visit** [NJCleanEnergy.com](http://NJCleanEnergy.com)

**Call** (866) NJSMART

**Jim Friedl**

Outreach Manager

732-855-6543

[jfriedl@trcsolutions.com](mailto:jfriedl@trcsolutions.com)