



# *LGEA Presentation Casino Reinvestment & Development Authority*

November 18, 2021



## New Jersey's Clean Energy Program

*Lighting the way to New Jersey's Clean Energy Future*

# INTRODUCTIONS

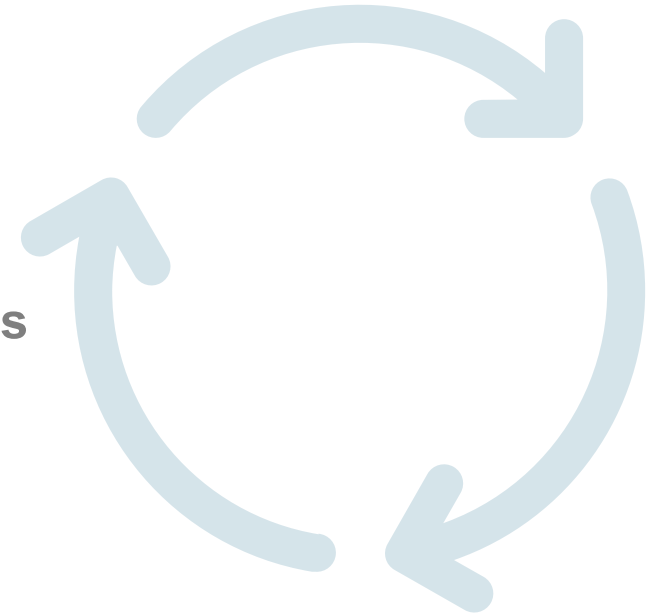
- *Casino Reinvestment & Development Authority*
  - Thomas Meehan – Director of Project Implementation & Management
  - Eric Carrier – Project Development Officer
  - Elizabeth Daley – Project Development Officer
  - Clark Hughes – Capital Projects/Procurement Manager (Spectra)
  - Kevin Blankenbuehler – Energy & Engineering Project Manager (Concord)
- *NJ Clean Energy Program*
  - Brian DeLuca – TRC Director
  - Sarah Walters – LGEA Project Manager
  - Moussa Traore – LGEA Lead Auditor
  - Greg Reinert – Outreach Account Manager, ACE
  - Arif Welcher – Government/Business Manager (BPU)

# AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified & other recommendations
- Energy Savings Improvement Program (ESIP)
- C&I Transition of EE Programs
- ACE Energy Efficiency Programs
- Questions regarding the draft audit report
- Next steps for CRDA

# LGEA PROCESS

- Application Approval
- Initial Call
- Facility Interviews
- Audit
- Benchmarking & Analysis
- Draft Reports
- LGEA Presentation
- Final Reports



# SITE VISIT & UTILITY ANALYSIS

## Overview of Systems, Baseline & Existing Conditions:

- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Cooking & Refrigeration Equipment

## Utility Consumption:

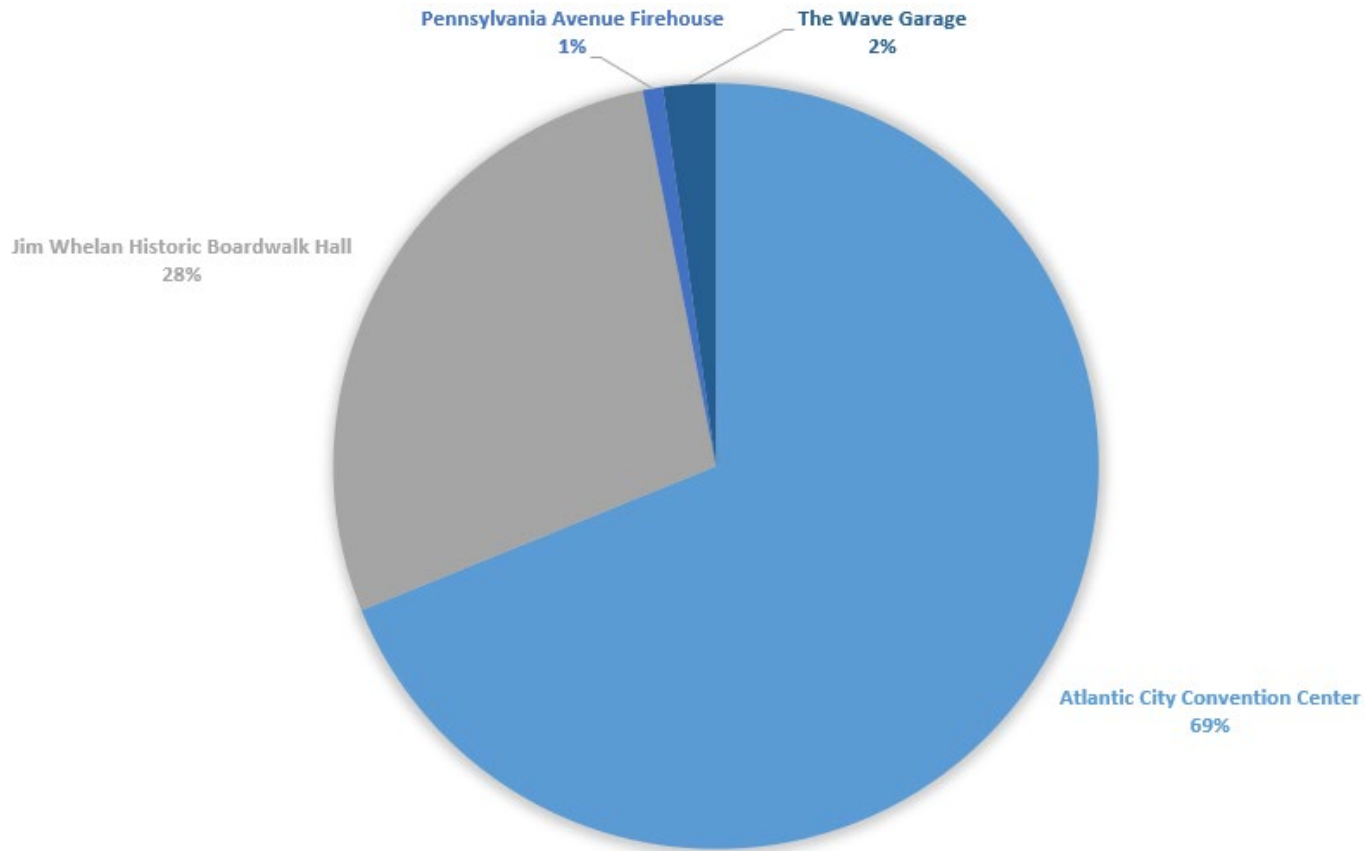
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Solar Consumption and Costs
- Chilled Water, Hot Water, & Steam Consumptions and Costs

## Sites Visited/Analyzed

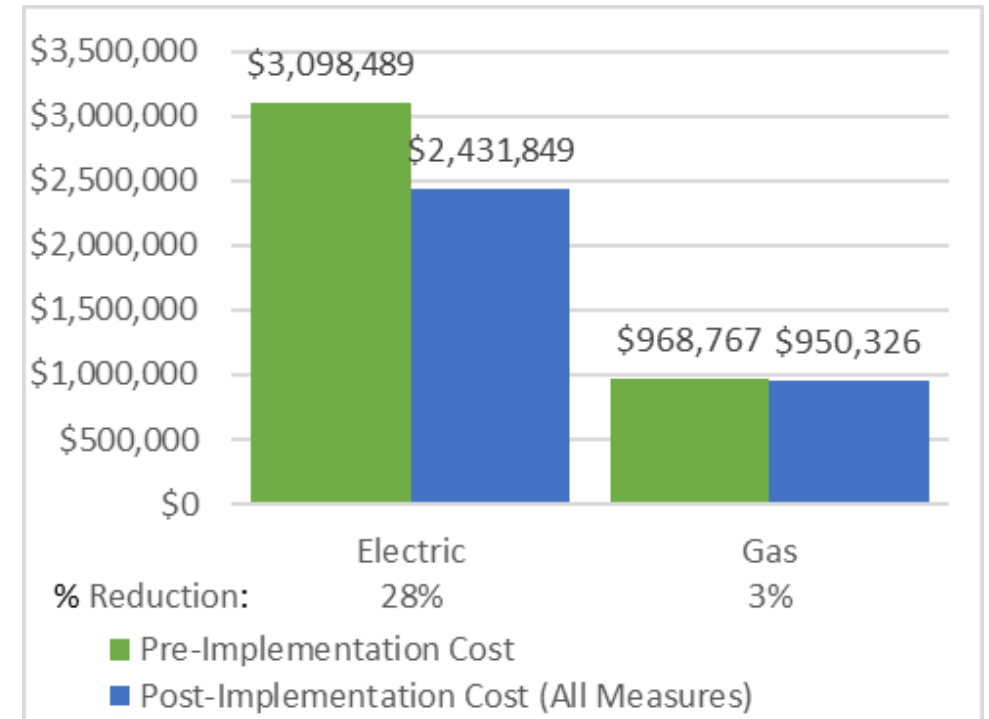
- Atlantic City Convention Center
- Jim Whelan Historic Boardwalk Hall
- Pennsylvania Ave Firehouse (Admin Offices)
- The Wave Garage

# UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



# BENCHMARKING



**ENERGY STAR® Statement of Energy Performance**

LEARN MORE AT [energystar.gov](http://energystar.gov)

# 52

**ENERGY STAR® Score<sup>1</sup>**

**Pennsylvania Avenue Firehouse (CRDA Headquarters)**

Primary Property Type: Office  
Gross Floor Area (ft<sup>2</sup>): 13,200  
Built: 2006

For Year Ending: December 31, 2019  
Date Generated: June 16, 2021

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	Property Owner	Primary Contact
Pennsylvania Avenue Firehouse (CRDA Headquarters) 15 S. Pennsylvania Avenue Atlantic City, New Jersey 08401	Casino Reinvestment Development Authority (CRDA) 15 South Pennsylvania Avenue Atlantic City, NJ 08401 (609) 344-8338	Thomas Meehan 15 South Pennsylvania Avenue Atlantic City, NJ 08401 (609) 344-8338 tmeehan@njcrda.com

Property ID: 14716809

**Energy Consumption and Energy Use Intensity (EUI)**

Site EUI	Annual Energy by Fuel	National Median Comparison
68.3 kBtu/ft <sup>2</sup>	Electric - Grid (kBtu) 673,008 (75%) Natural Gas (kBtu) 228,921 (25%)	National Median Site EUI (kBtu/ft <sup>2</sup> ) 70.9 National Median Source EUI (kBtu/ft <sup>2</sup> ) 167.1 % Diff from National Median Source EUI -4%
Source EUI		Annual Emissions
161 kBtu/ft <sup>2</sup>		Greenhouse Gas Emissions (Metric Tons CO <sub>2</sub> e/year) 17

**Site EUI**  
68.3 kBtu/ft<sup>2</sup>

**Source EUI**  
161 kBtu/ft<sup>2</sup>

**National Median Comparison**

National Median Site EUI (kBtu/ft<sup>2</sup>) 70.9

National Median Source EUI (kBtu/ft<sup>2</sup>) 167.1

% Diff from National Median Source EUI -4%

Site Name	ENERGY STAR® Score
Atlantic City Convention Center	N/A
Jim Whelan Historic Boardwalk Hall	N/A
Pennsylvania Avenue Firehouse (Admin)	52
The Wave Garage	N/A

**Signature & Stamp of Verifying Professional**

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

LP Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Licensed Professional

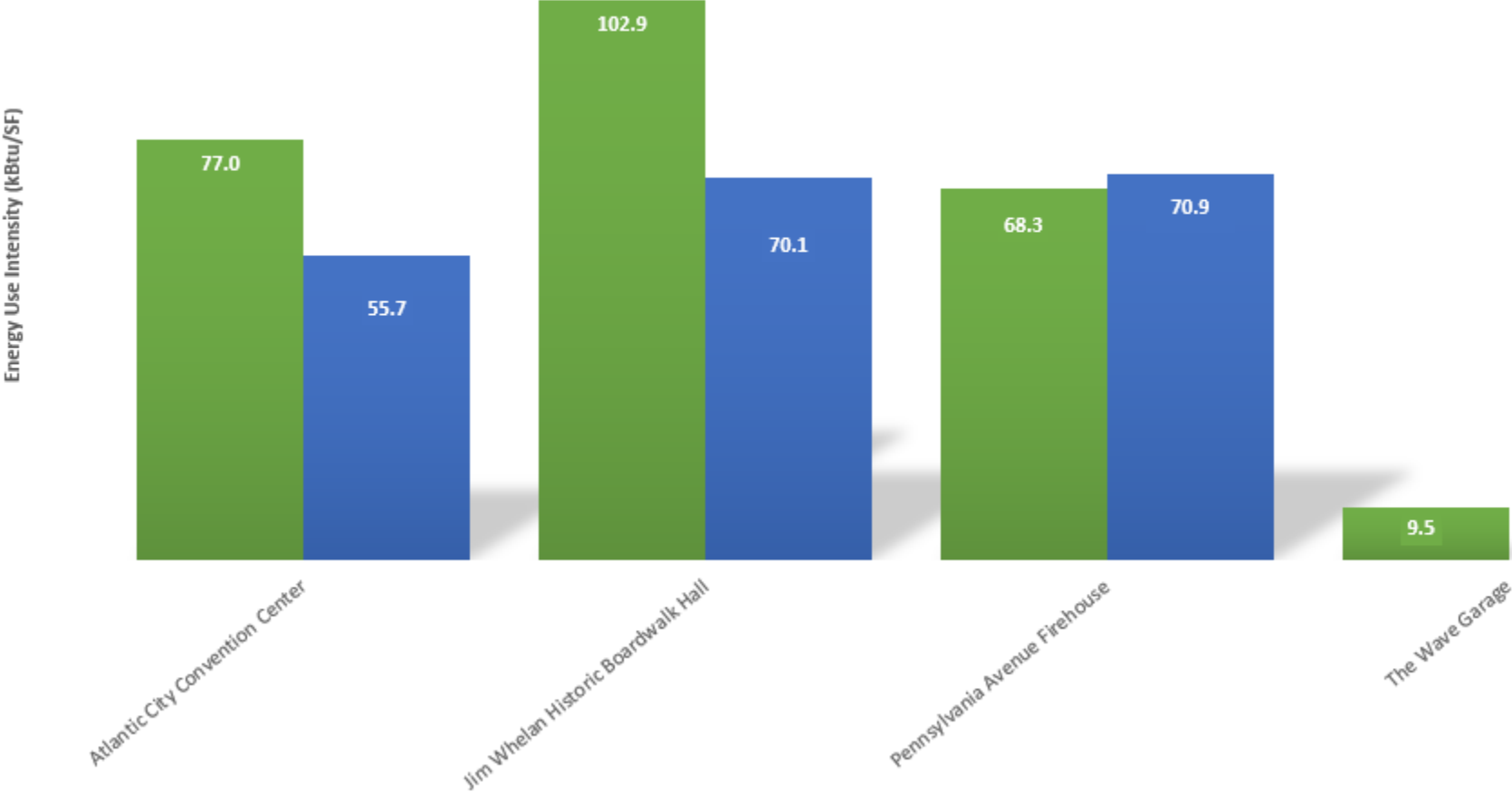
\_\_\_\_\_  
( ) \_\_\_\_\_

Professional Engineer or Registered Architect Stamp (if applicable)

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.

# BENCHMARKING

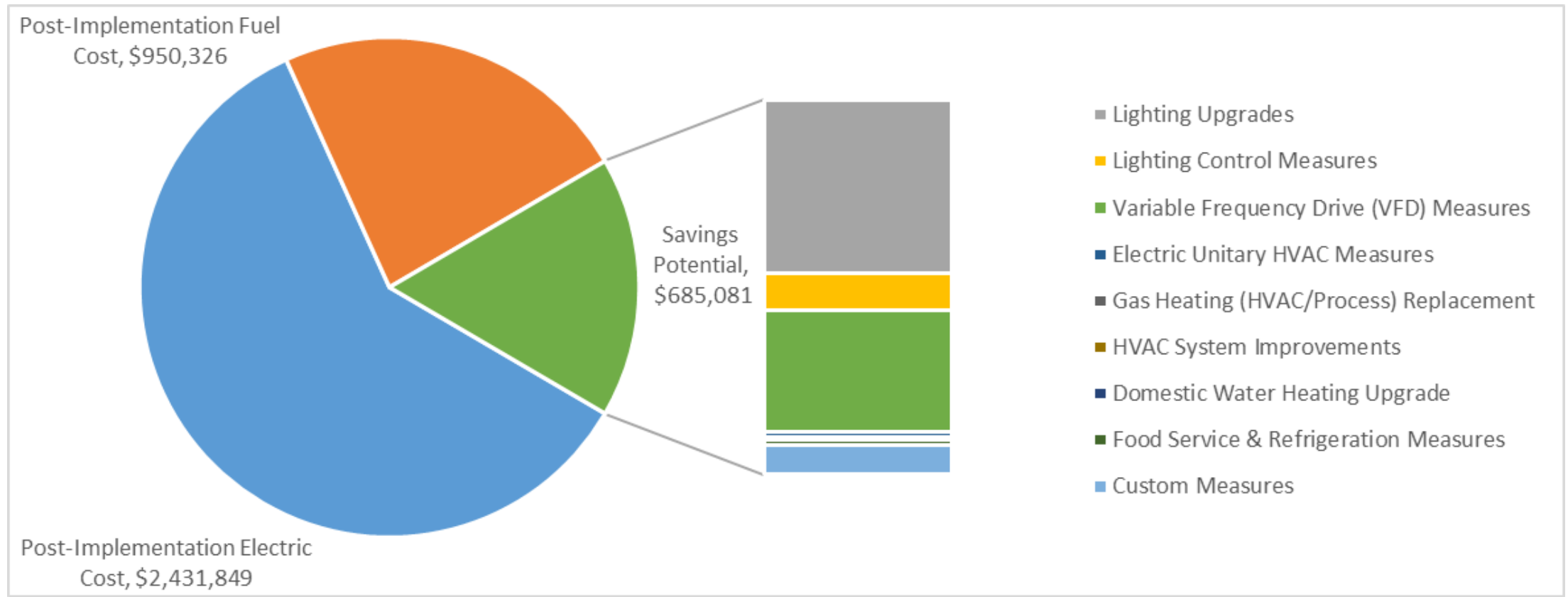
■ Site Energy Use Intensity (kBtu/SF)  
■ National Median Energy Use Intensity (kBtu/SF)





# ALL OPPORTUNITIES

## Savings Potential



# ALL OPPORTUNITIES

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>		<b>3,619,869</b>	<b>797.4</b>	<b>-692.3</b>	<b>\$316,366</b>	<b>\$1,202,980</b>	<b>\$152,217</b>	<b>\$1,050,763</b>	<b>3.3</b>	<b>3,564,121</b>
ECM 1	Install LED Fixtures	1,452,454	208.3	-255.1	\$123,573	\$449,258	\$29,075	\$420,183	3.4	1,432,745
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	510,727	162.3	-108.8	\$46,817	\$296,366	\$39,880	\$256,486	5.5	501,563
ECM 3	Retrofit Fixtures with LED Lamps	1,654,303	426.6	-328.0	\$145,729	\$456,342	\$83,262	\$373,080	2.6	1,627,471
ECM 4	Install LED Exit Signs	2,384	0.2	-0.5	\$247	\$1,014	\$0	\$1,014	4.1	2,341
<b>Lighting Control Measures</b>		<b>730,515</b>	<b>131.9</b>	<b>-142.1</b>	<b>\$68,505</b>	<b>\$429,200</b>	<b>\$223,415</b>	<b>\$205,785</b>	<b>3.0</b>	<b>718,980</b>
ECM 5	Install Occupancy Sensor Lighting Controls	199,601	56.8	-42.1	\$19,756	\$215,000	\$26,625	\$188,375	9.5	196,068
ECM 6	Install High/Low Lighting Controls	530,914	75.0	-100.0	\$48,748	\$214,200	\$196,790	\$17,410	0.4	522,912
<b>Variable Frequency Drive (VFD) Measures</b>		<b>2,167,471</b>	<b>941.7</b>	<b>129.1</b>	<b>\$220,805</b>	<b>\$1,401,717</b>	<b>\$224,425</b>	<b>\$1,177,292</b>	<b>5.3</b>	<b>2,197,743</b>
ECM 7	Install VFDs on Constant Volume (CV) Fans	2,094,684	932.7	12.6	\$212,892	\$1,351,696	\$218,350	\$1,133,346	5.3	2,110,804
ECM 8	Install VFDs on Kitchen Hood Fan Motors	21,779	0.3	116.5	\$3,588	\$16,380	\$1,575	\$14,805	4.1	35,572
ECM 9	Install VFDs on Water Supply Pump	51,009	8.6	0.0	\$4,325	\$33,641	\$4,500	\$29,141	6.7	51,366
<b>Electric Unitary HVAC Measures</b>		<b>118,917</b>	<b>89.3</b>	<b>14.6</b>	<b>\$10,721</b>	<b>\$747,316</b>	<b>\$43,478</b>	<b>\$703,839</b>	<b>65.6</b>	<b>121,455</b>
ECM 10	Install High Efficiency Air Conditioning Units	102,186	78.2	14.6	\$9,343	\$693,966	\$43,378	\$650,589	69.6	104,607
ECM 11	Install High Efficiency Heat Pumps	16,731	11.1	0.0	\$1,378	\$53,350	\$100	\$53,250	38.6	16,848
<b>Gas Heating (HVAC/Process) Replacement</b>		<b>0</b>	<b>0.0</b>	<b>14.0</b>	<b>\$165</b>	<b>\$7,587</b>	<b>\$500</b>	<b>\$7,087</b>	<b>42.9</b>	<b>1,642</b>
ECM 12	Install High Efficiency Furnaces	0	0.0	14.0	\$165	\$7,587	\$500	\$7,087	42.9	1,642

# ALL OPPORTUNITIES

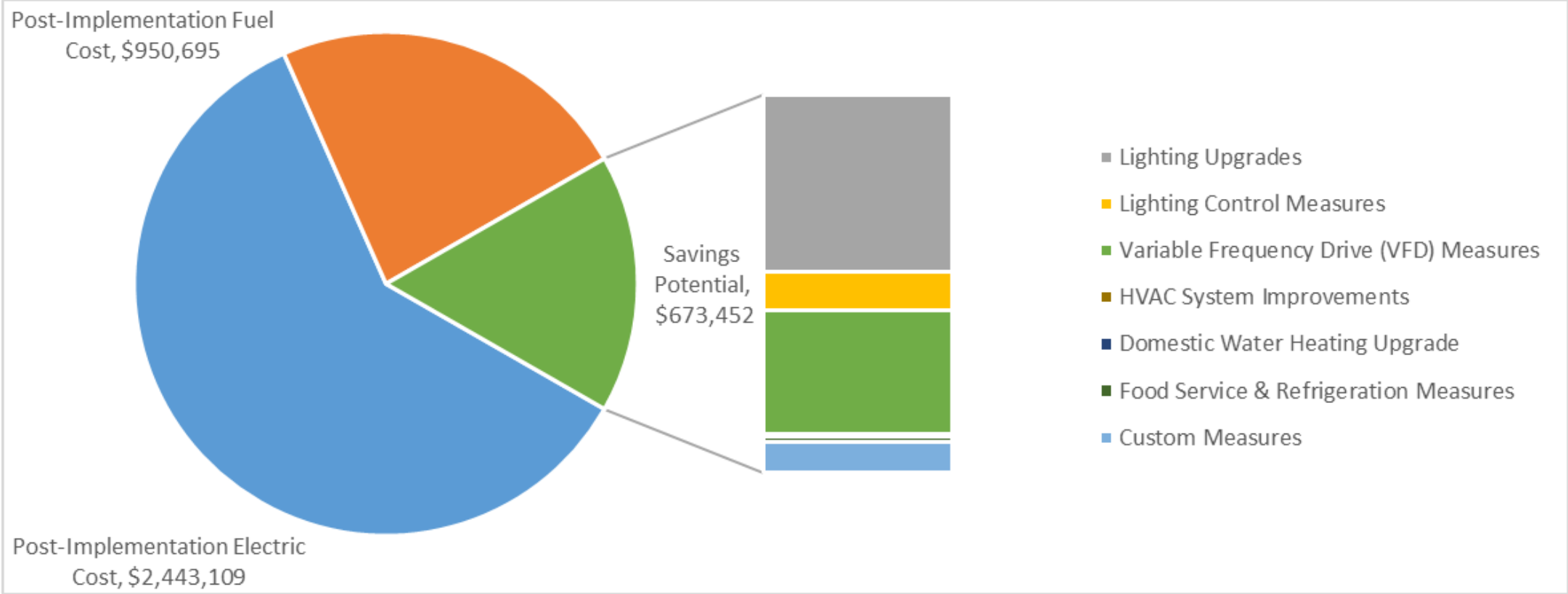
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (lbs)
<b>HVAC System Improvements</b>		<b>4,718</b>	<b>0.0</b>	<b>0.0</b>	<b>\$400</b>	<b>\$329</b>	<b>\$114</b>	<b>\$215</b>	<b>0.5</b>	<b>4,751</b>
ECM 13	Install Pipe Insulation	4,718	0.0	0.0	\$400	\$329	\$114	\$215	0.5	4,751
<b>Domestic Water Heating Upgrade</b>		<b>15,292</b>	<b>0.0</b>	<b>130.9</b>	<b>\$3,233</b>	<b>\$3,419</b>	<b>\$1,014</b>	<b>\$2,405</b>	<b>0.7</b>	<b>30,725</b>
ECM 14	Install Low-Flow DHW Devices	15,292	0.0	130.9	\$3,233	\$3,419	\$1,014	\$2,405	0.7	30,725
<b>Food Service &amp; Refrigeration Measures</b>		<b>106,404</b>	<b>9.4</b>	<b>0.0</b>	<b>\$10,675</b>	<b>\$98,194</b>	<b>\$5,525</b>	<b>\$92,669</b>	<b>8.7</b>	<b>107,148</b>
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	12,844	1.6	0.0	\$1,295	\$12,132	\$1,600	\$10,532	8.1	12,934
ECM 16	Refrigeration Controls	30,026	0.6	0.0	\$3,047	\$38,548	\$2,075	\$36,473	12.0	30,236
ECM 17	Replace Refrigeration Equipment	41,773	4.8	0.0	\$4,453	\$44,294	\$1,150	\$43,144	9.7	42,065
ECM 18	Vending Machine Control	21,760	2.5	0.0	\$1,880	\$3,220	\$700	\$2,520	1.3	21,912
<b>Custom Measures</b>		<b>264,521</b>	<b>0.0</b>	<b>1,890.0</b>	<b>\$54,210</b>	<b>\$283,028</b>	<b>\$0</b>	<b>\$283,028</b>	<b>5.2</b>	<b>487,666</b>
ECM 19	Retro-Commissioning Study	264,521	0.0	1,890.0	\$54,210	\$283,028	\$0	\$283,028	5.2	487,666
<b>TOTALS</b>		<b>7,027,708</b>	<b>1,969.7</b>	<b>1,344.2</b>	<b>\$685,081</b>	<b>\$4,173,770</b>	<b>\$650,688</b>	<b>\$3,523,082</b>	<b>5.1</b>	<b>7,234,230</b>

\* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

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

# COST EFFECTIVE OPPORTUNITIES

## Savings Potential



# COST EFFECTIVE OPPORTUNITIES

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>		<b>3,619,869</b>	<b>797.4</b>	<b>-692.3</b>	<b>\$316,366</b>	<b>\$1,202,980</b>	<b>\$152,217</b>	<b>\$1,050,763</b>	<b>3.3</b>	<b>3,564,121</b>
ECM 1	Install LED Fixtures	1,452,454	208.3	-255.1	\$123,573	\$449,258	\$29,075	\$420,183	3.4	1,432,745
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	510,727	162.3	-108.8	\$46,817	\$296,366	\$39,880	\$256,486	5.5	501,563
ECM 3	Retrofit Fixtures with LED Lamps	1,654,303	426.6	-328.0	\$145,729	\$456,342	\$83,262	\$373,080	2.6	1,627,471
ECM 4	Install LED Exit Signs	2,384	0.2	-0.5	\$247	\$1,014	\$0	\$1,014	4.1	2,341
<b>Lighting Control Measures</b>		<b>728,604</b>	<b>131.4</b>	<b>-142.1</b>	<b>\$68,360</b>	<b>\$425,542</b>	<b>\$222,900</b>	<b>\$202,642</b>	<b>3.0</b>	<b>717,055</b>
ECM 5	Install Occupancy Sensor Lighting Controls	197,690	56.4	-42.1	\$19,612	\$211,342	\$26,110	\$185,232	9.4	194,143
ECM 6	Install High/Low Lighting Controls	530,914	75.0	-100.0	\$48,748	\$214,200	\$196,790	\$17,410	0.4	522,912
<b>Variable Frequency Drive (VFD) Measures</b>		<b>2,167,471</b>	<b>941.7</b>	<b>129.1</b>	<b>\$220,805</b>	<b>\$1,401,717</b>	<b>\$224,425</b>	<b>\$1,177,292</b>	<b>5.3</b>	<b>2,197,743</b>
ECM 7	Install VFDs on Constant Volume (CV) Fans	2,094,684	932.7	12.6	\$212,892	\$1,351,696	\$218,350	\$1,133,346	5.3	2,110,804
ECM 8	Install VFDs on Kitchen Hood Fan Motors	21,779	0.3	116.5	\$3,588	\$16,380	\$1,575	\$14,805	4.1	35,572
ECM 9	Install VFDs on Water Supply Pump	51,009	8.6	0.0	\$4,325	\$33,641	\$4,500	\$29,141	6.7	51,366
<b>HVAC System Improvements</b>		<b>4,718</b>	<b>0.0</b>	<b>0.0</b>	<b>\$400</b>	<b>\$329</b>	<b>\$114</b>	<b>\$215</b>	<b>0.5</b>	<b>4,751</b>
ECM 13	Install Pipe Insulation	4,718	0.0	0.0	\$400	\$329	\$114	\$215	0.5	4,751
<b>Domestic Water Heating Upgrade</b>		<b>15,292</b>	<b>0.0</b>	<b>130.9</b>	<b>\$3,233</b>	<b>\$3,419</b>	<b>\$1,014</b>	<b>\$2,405</b>	<b>0.7</b>	<b>30,725</b>
ECM 14	Install Low-Flow DHW Devices	15,292	0.0	130.9	\$3,233	\$3,419	\$1,014	\$2,405	0.7	30,725
<b>Food Service &amp; Refrigeration Measures</b>		<b>99,357</b>	<b>9.2</b>	<b>0.0</b>	<b>\$10,078</b>	<b>\$85,038</b>	<b>\$4,775</b>	<b>\$80,263</b>	<b>8.0</b>	<b>100,052</b>
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	12,844	1.6	0.0	\$1,295	\$12,132	\$1,600	\$10,532	8.1	12,934
ECM 16	Refrigeration Controls	22,980	0.4	0.0	\$2,450	\$25,392	\$1,325	\$24,067	9.8	23,141
ECM 17	Replace Refrigeration Equipment	41,773	4.8	0.0	\$4,453	\$44,294	\$1,150	\$43,144	9.7	42,065
ECM 18	Vending Machine Control	21,760	2.5	0.0	\$1,880	\$3,220	\$700	\$2,520	1.3	21,912
<b>Custom Measures</b>		<b>264,521</b>	<b>0.0</b>	<b>1,890.0</b>	<b>\$54,210</b>	<b>\$283,028</b>	<b>\$0</b>	<b>\$283,028</b>	<b>5.2</b>	<b>487,666</b>
ECM 19	Retro-Commissioning Study	264,521	0.0	1,890.0	\$54,210	\$283,028	\$0	\$283,028	5.2	487,666
<b>TOTALS</b>		<b>6,899,833</b>	<b>1,879.8</b>	<b>1,315.6</b>	<b>\$673,452</b>	<b>\$3,402,053</b>	<b>\$605,445</b>	<b>\$2,796,608</b>	<b>4.2</b>	<b>7,102,112</b>

\* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

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

# ATLANTIC CITY CONVENTION CENTER

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			2,691,784	609.9	-529	\$221,979	\$768,563	\$88,420	\$680,143	3.1	2,648,661
ECM 1	Install LED Fixtures	Yes	1,262,176	183.8	-228	\$104,324	\$321,505	\$16,545	\$304,960	2.9	1,244,318
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	286,494	111.5	-61	\$23,570	\$200,037	\$27,615	\$172,422	7.3	281,353
ECM 3	Retrofit Fixtures with LED Lamps	Yes	1,143,114	314.6	-240	\$94,085	\$247,022	\$44,260	\$202,762	2.2	1,122,991
<b>Lighting Control Measures</b>			272,523	50.2	-58	\$22,421	\$193,758	\$123,370	\$70,388	3.1	267,633
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	58,176	20.4	-12	\$4,786	\$74,958	\$8,645	\$66,313	13.9	57,132
ECM 5	Install High/Low Lighting Controls	Yes	214,346	29.9	-46	\$17,635	\$118,800	\$114,725	\$4,075	0.2	210,500
<b>Variable Frequency Drive (VFD) Measures</b>			578,850	227.9	66	\$49,855	\$431,586	\$64,500	\$367,086	7.4	590,640
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	517,234	219.0	13	\$44,000	\$386,940	\$59,525	\$327,415	7.4	522,325
ECM 7	Install VFDs on Kitchen Hood Fan Motors	Yes	10,607	0.2	54	\$1,530	\$11,005	\$475	\$10,530	6.9	16,949
ECM 8	Install VFDs on Water Supply Pump	Yes	51,009	8.6	0	\$4,325	\$33,641	\$4,500	\$29,141	6.7	51,366
<b>Unitary HVAC Measures</b>			105,982	83.2	11	\$9,115	\$670,389	\$40,164	\$630,226	69.1	108,008
ECM 9	Install High Efficiency Air Conditioning Units	No	95,397	74.4	11	\$8,217	\$625,253	\$40,164	\$585,090	71.2	97,349
ECM 10	Install High Efficiency Heat Pumps	No	10,585	8.8	0	\$897	\$45,136	\$0	\$45,136	50.3	10,659
<b>Gas Heating (HVAC/Process) Replacement</b>			0	0.0	14	\$165	\$7,587	\$500	\$7,087	42.9	1,642
ECM 11	Install High Efficiency Furnaces	No	0	0.0	14	\$165	\$7,587	\$500	\$7,087	42.9	1,642
<b>HVAC System Improvements</b>			4,718	0.0	0	\$400	\$329	\$114	\$215	0.5	4,751
ECM 12	Install Pipe Insulation	Yes	4,718	0.0	0	\$400	\$329	\$114	\$215	0.5	4,751
<b>Domestic Water Heating Upgrade</b>			12,790	0.0	13	\$1,242	\$416	\$208	\$208	0.2	14,448
ECM 13	Install Low-Flow DHW Devices	Yes	12,790	0.0	13	\$1,242	\$416	\$208	\$208	0.2	14,448
<b>Food Service &amp; Refrigeration Measures</b>			30,602	2.9	0	\$2,595	\$20,089	\$1,920	\$18,169	7.0	30,816
ECM 14	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	3,408	0.4	0	\$289	\$3,943	\$520	\$3,423	11.8	3,432
ECM 15	Refrigeration Controls	No	7,047	0.1	0	\$597	\$13,156	\$750	\$12,406	20.8	7,096
ECM 16	Vending Machine Control	Yes	20,148	2.3	0	\$1,708	\$2,990	\$650	\$2,340	1.4	20,289
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			3,584,220	890.8	-508	\$297,894	\$1,401,585	\$277,782	\$1,123,803	3.8	3,549,853
<b>TOTALS (ALL MEASURES)</b>			3,697,249	974.1	-483	\$307,772	\$2,092,717	\$319,196	\$1,773,521	5.8	3,666,599

\* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

# JIM WHELAN HISTORIC BOARDWALK HALL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			755,647	167.2	-159	\$78,372	\$323,082	\$46,642	\$276,440	3.5	742,361
ECM 1	Install LED Fixtures	Yes	129,504	22.0	-27	\$13,432	\$83,289	\$7,780	\$75,509	5.6	127,228
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	224,234	50.8	-48	\$23,247	\$96,329	\$12,265	\$84,064	3.6	220,210
ECM 3	Retrofit Fixtures with LED Lamps	Yes	399,525	94.2	-83	\$41,446	\$142,450	\$26,597	\$115,853	2.8	392,581
ECM 4	Install LED Exit Signs	Yes	2,384	0.2	-1	\$247	\$1,014	\$0	\$1,014	4.1	2,341
<b>Lighting Control Measures</b>			387,768	69.9	-83	\$40,201	\$189,016	\$68,205	\$120,811	3.0	380,810
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	132,570	34.1	-28	\$13,744	\$127,816	\$16,305	\$111,511	8.1	130,191
ECM 6	Install High/Low Lighting Controls	Yes	255,199	35.8	-54	\$26,457	\$61,200	\$51,900	\$9,300	0.4	250,619
<b>Variable Frequency Drive (VFD) Measures</b>			1,574,602	709.8	63	\$168,725	\$942,361	\$159,250	\$783,111	4.6	1,592,985
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	1,563,430	709.6	0	\$166,668	\$936,986	\$158,150	\$778,836	4.7	1,574,362
ECM 8	Install VFDs on Kitchen Hood Fan Motors	Yes	11,171	0.1	63	\$2,058	\$5,375	\$1,100	\$4,275	2.1	18,623
<b>Domestic Water Heating Upgrade</b>			0	0.0	117	\$1,617	\$2,939	\$770	\$2,169	1.3	13,757
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	117	\$1,617	\$2,939	\$770	\$2,169	1.3	13,757
<b>Food Service &amp; Refrigeration Measures</b>			75,802	6.5	0	\$8,081	\$78,105	\$3,605	\$74,500	9.2	76,332
ECM 10	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	9,437	1.2	0	\$1,006	\$8,189	\$1,080	\$7,109	7.1	9,503
ECM 11	Refrigeration Controls	Yes	22,980	0.4	0	\$2,450	\$25,392	\$1,325	\$24,067	9.8	23,141
ECM 12	Replace Refrigeration Equipment	Yes	41,773	4.8	0	\$4,453	\$44,294	\$1,150	\$43,144	9.7	42,065
ECM 13	Vending Machine Control	Yes	1,612	0.2	0	\$172	\$230	\$50	\$180	1.0	1,623
<b>Custom Measures</b>			264,521	0.0	1,890	\$54,210	\$283,028	\$0	\$283,028	5.2	487,666
ECM 14	Retro-Commissioning Study	Yes	264,521	0.0	1,890	\$54,210	\$283,028	\$0	\$283,028	5.2	487,666
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			3,058,340	953.4	1,829	\$351,206	\$1,818,531	\$278,472	\$1,540,059	4.4	3,293,912
<b>TOTALS (ALL MEASURES)</b>			3,058,340	953.4	1,829	\$351,206	\$1,818,531	\$278,472	\$1,540,059	4.4	3,293,912

\* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

# PENNSYLVANIA AVE FIREHOUSE (ADMIN OFFICES)

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			36,619	6.1	-5	\$5,746	\$15,902	\$3,294	\$12,608	2.2	36,329
ECM 1	Install LED Fixtures	Yes	14,721	0.0	0	\$2,336	\$6,130	\$1,100	\$5,030	2.2	14,824
ECM 2	Retrofit Fixtures with LED Lamps	Yes	21,898	6.1	-5	\$3,411	\$9,772	\$2,194	\$7,578	2.2	21,505
<b>Lighting Control Measures</b>			7,151	2.0	-2	\$1,114	\$8,793	\$1,370	\$7,423	6.7	7,023
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	6,944	1.9	-1	\$1,082	\$8,568	\$1,160	\$7,408	6.8	6,820
ECM 4	Install High/Low Lighting Controls	Yes	207	0.1	0	\$32	\$225	\$210	\$15	0.5	203
<b>Variable Frequency Drive (VFD) Measures</b>			14,019	4.0	0	\$2,224	\$27,770	\$675	\$27,095	12.2	14,117
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	14,019	4.0	0	\$2,224	\$27,770	\$675	\$27,095	12.2	14,117
<b>Unitary HVAC Measures</b>			6,981	4.3	4	\$1,157	\$70,404	\$3,314	\$67,090	58.0	7,451
ECM 6	Install High Efficiency Air Conditioning Units	No	6,789	3.8	4	\$1,126	\$68,713	\$3,214	\$65,499	58.2	7,258
ECM 7	Install High Efficiency Heat Pumps	No	192	0.6	0	\$30	\$1,691	\$100	\$1,591	52.3	193
<b>Domestic Water Heating Upgrade</b>			2,224	0.0	0	\$353	\$57	\$32	\$25	0.1	2,240
ECM 8	Install Low-Flow DHW Devices	Yes	2,224	0.0	0	\$353	\$57	\$32	\$25	0.1	2,240
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			60,014	12.0	-6	\$9,437	\$52,523	\$5,371	\$47,152	5.0	59,709
<b>TOTALS (ALL MEASURES)</b>			66,995	16.4	-3	\$10,594	\$122,927	\$8,685	\$114,242	10.8	67,160

\* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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



# THE WAVE GARAGE

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			135,819	14.3	0	\$10,269	\$95,432	\$13,861	\$81,571	7.9	136,769
ECM 1	Install LED Fixtures	Yes	46,053	2.5	0	\$3,482	\$38,334	\$3,650	\$34,684	10.0	46,375
ECM 2	Retrofit Fixtures with LED Lamps	Yes	89,767	11.8	0	\$6,787	\$57,098	\$10,211	\$46,887	6.9	90,394
<b>Lighting Control Measures</b>			63,073	9.8	0	\$4,769	\$37,633	\$30,470	\$7,163	1.5	63,514
ECM 3	Install Occupancy Sensor Lighting Controls	No	1,911	0.5	0	\$145	\$3,658	\$515	\$3,143	21.7	1,925
ECM 4	Install High/Low Lighting Controls	Yes	61,162	9.3	0	\$4,624	\$33,975	\$29,955	\$4,020	0.9	61,589
<b>Unitary HVAC Measures</b>			5,955	1.8	0	\$450	\$6,523	\$0	\$6,523	14.5	5,996
ECM 5	Install High Efficiency Heat Pumps	No	5,955	1.8	0	\$450	\$6,523	\$0	\$6,523	14.5	5,996
<b>Domestic Water Heating Upgrade</b>			278	0.0	0	\$21	\$7	\$4	\$3	0.2	280
ECM 6	Install Low-Flow DHW Devices	Yes	278	0.0	0	\$21	\$7	\$4	\$3	0.2	280
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			197,259	23.6	0	\$14,914	\$129,415	\$43,820	\$85,595	5.7	198,638
<b>TOTALS (ALL MEASURES)</b>			205,125	25.8	0	\$15,509	\$139,595	\$44,335	\$95,260	6.1	206,559

\* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

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

# 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***

# SOLAR ENERGY GENERATION POTENTIAL

	Boardwalk Hall
<i>Potential:</i>	<b>HIGH</b>
<i>System Potential: (kW)</i>	1,288
<i>Electric Generation: (kWh per year)</i>	1,534,485
<i>Displaced Cost: (per year)</i>	\$163,580

Successor Solar Incentive Program

<https://www.njcleanenergy.com/renewable-energy/programs/susi-program>

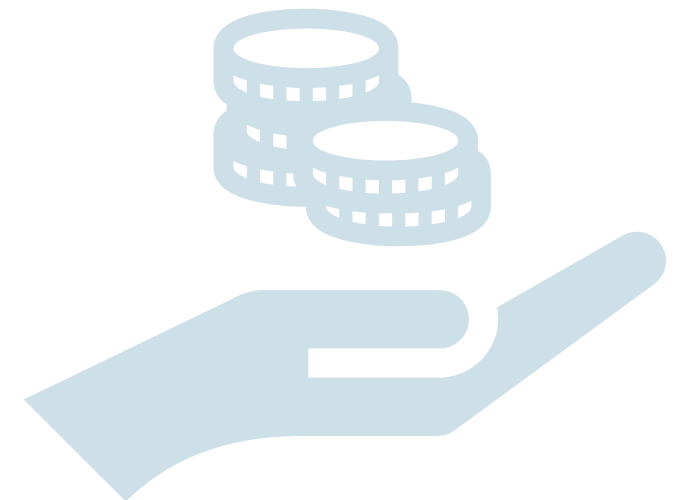
Community Solar Energy Pilot Program

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

# FINANCING MECHANISM: ESIP

## ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting – NJ ESIP
- Financing Mechanism that allows state entities to make energy efficiency improvements without impacting their budgets
- Administered by the NJBPU
- Project is paid for with the value of its own energy savings
- 15 or 20 year self-funding loan
- Recent Energy Efficiency Transition
  - NJBPU Approved Incentive Programs
    - Utility or NJCEP
- Can be combined with Federal/State Pandemic Relief Funds
- No upfront capital expenses
- No referendum or impact to tax payers

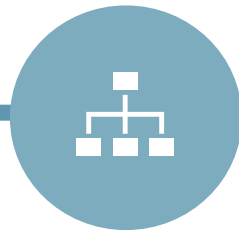


# FINANCING MECHANISM: ESIP



**Preliminary  
Energy Audit**

LGEA



**Select Path**

ESCO Model  
Hybrid Model  
DIY Model



**Investment Grade  
Energy Audit**

Prioritize ECM's to  
determine project

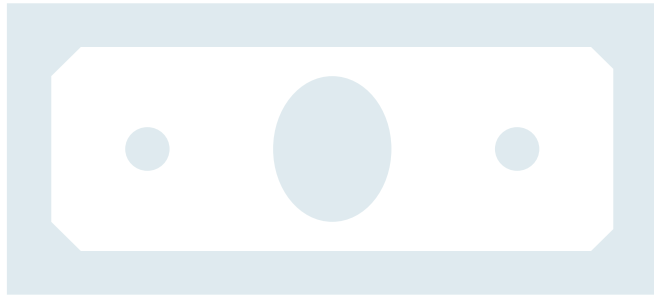


**Energy Savings Plan  
Developed**

Cash Flow Positive  
Third Part Audit of Plan



Submitted for  
**BPU**  
Approval



# Energy SAVINGS Improvement Program

## FOR MORE INFORMATION

**Michelle Rossi**

ESIP Coordinator

ESIP@bpu.nj.gov

o: 609.633.9641

c: 609.915.0903

# C&I TRANSITION OF ENERGY EFFICIENCY PROGRAMS

<https://www.njcleanenergy.com/transition>

LOCAL  
GOVERNMENT  
CUSTOMERS

COMMERCIAL &  
INSTITUTIONAL  
CUSTOMERS

LARGE  
ENERGY  
CUSTOMERS

## EXISTING BUILDINGS

### MEASUREMENT & AUDITS

FREE Energy Audits



### RETROFITS

Prescriptive &  
Custom Rebates

Direct Install

Engineered Solutions

And more from  
your local utility!



Incentives up  
to \$4 million  
for eligible projects



## NEW CONSTRUCTION

Prescriptive & Custom  
Rebates for New  
Construction and  
Gut Rehabs

Pay for Performance  
incentives for  
buildings over  
50,000 sq. ft.



## DISTRIBUTED ENERGY RESOURCES

Combined Heat & Power  
and Fuel Cell Installation  
Incentives

Microgrid Development

Battery Storage

Muni EV Fleets



# Energy Solutions for Businesses

Prescriptive and Custom  
Small Business Direct Install  
Energy Management  
Engineered Solutions



[atlanticcityelectric.com/WaysToSave/ForYourBusiness](http://atlanticcityelectric.com/WaysToSave/ForYourBusiness)

*trainings – trade ally sign-up – find a trade ally –  
submit and track your applications*

Greg Reinert

732.340.6385

[GReinert@trccompanies.com](mailto:GReinert@trccompanies.com)

[ace.energysavings@trccompanies.com](mailto:ace.energysavings@trccompanies.com)

833.ACE.PAYS (223.7297)

# FOR MORE INFORMATION

**Sarah Walters – LGEA Project Manager**

[SWalters@trccompanies.com](mailto:SWalters@trccompanies.com)

(732) 589-7372

**Moussa Traore – LGEA Lead Energy Auditor**

[MTraore@trccompanies.com](mailto:MTraore@trccompanies.com)

(732) 902-1797

**Greg Reinert – Outreach Account Manager**

[GReinert@trccompanies.com](mailto:GReinert@trccompanies.com)

(732) 340-6385

THANK YOU

