

# New Jersey's Clean Energy Program

LGEA Presentation  
*Rutgers University*

March 9, 2020

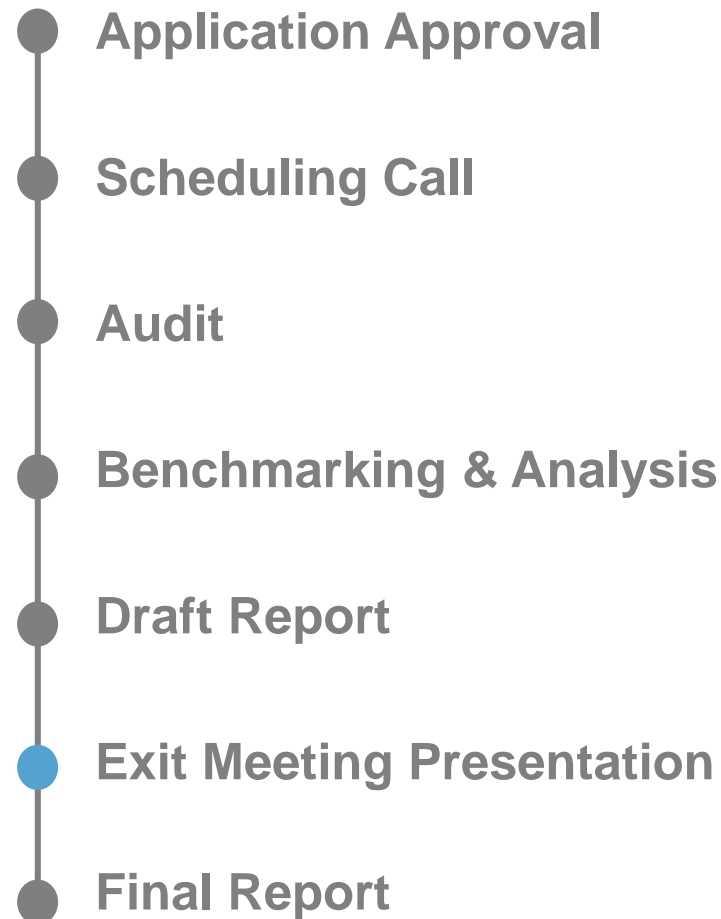
# INTRODUCTIONS

- *Rutgers University*
  - Joe Vocaturo – 1 Washington Park Condo Manager
  - Bill Fonte – Washington Park Fidelco Building Manager
  - Thomas Boland – Rutgers Project Lead
  - Gerald Thomas – Rutgers Sr. Director Capital Projects and Utilities Accounting
  - Mike Kornitas – Rutgers Director of Sustainability & Energy
- *NJ Clean Energy Program*
  - Aimee Lalonde – TRC Program Manager
  - Kush Patel – Energy Auditor
  - Sarah Walters – LGEA Account Manager
  - Tony O'Donnell– Outreach Account Manager
  - Michelle Rossi – ESIP Coordinator (BPU)
  - 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
- Questions regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Rutgers Univeristy

# LGEA PROCESS



# ONE WASHINGTON PARK

## Overview of Systems, Baseline & Existing Conditions:

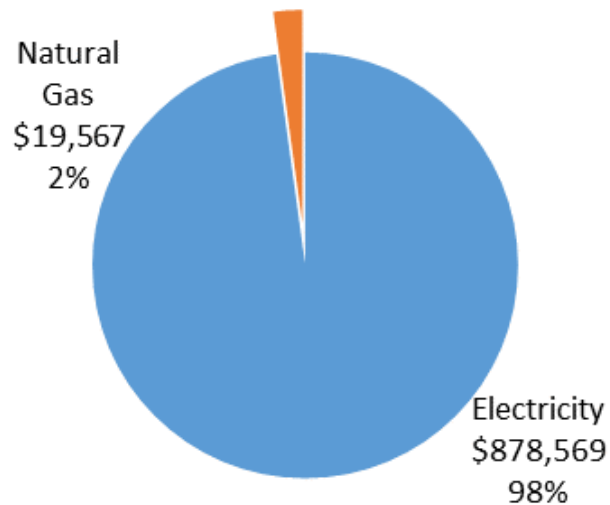
- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment

## Utility Consumption:

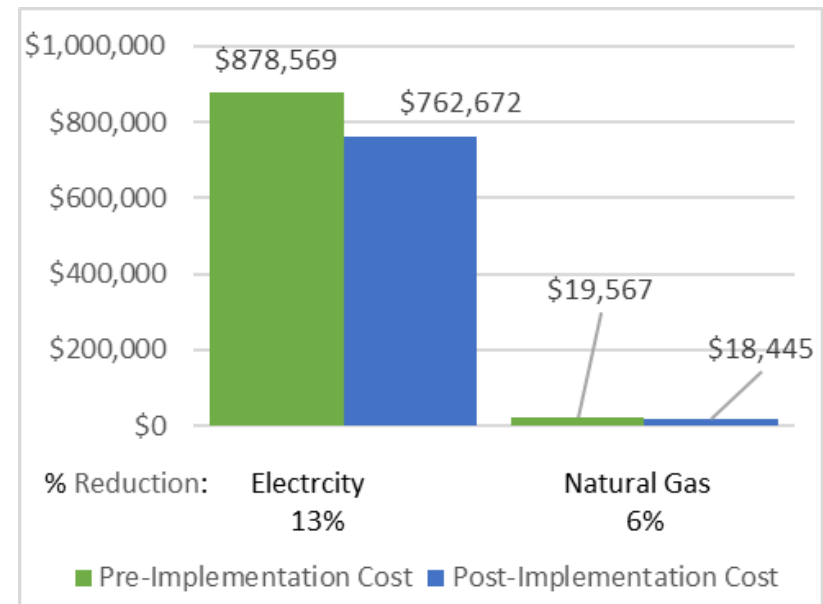
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

# 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)

**N/A** Rutgers-One washington Park  
Primary Property Type: College/University  
Gross Floor Area (ft²): 397,281  
Built: 1983

ENERGY STAR® Score<sup>1</sup>

For Year Ending: January 31, 2019  
Date Generated: February 10, 2020

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		
<b>Property Address</b> Rutgers-One washington Park One Washington Park Newark, New Jersey 07012	<b>Property Owner</b> Rutgers University 130 Great bay Blvd Tuckerton, NJ 08087 ( ) - ( ) - ( )	<b>Primary Contact</b> Michael Komitas 130 Great bay Blvd Tuckerton, NJ 08087 4125572813 michael.komitas@rutgers.edu
<b>Property ID:</b> 7853704		
Energy Consumption and Energy Use Intensity (EUI)		
<b>Site EUI</b> 80.6 kBtu/ft²	<b>Annual Energy by Fuel</b> Electricity Grid (kBtu) 29,987,951 (94%) Natural Gas (kBtu) 2,036,928 (6%)	<b>National Median Comparison</b> National Median Site EUI (kBtu/ft²) 67.2 National Median Source EUI (kBtu/ft²) 180.6 % Diff from National Median Source EUI 20%
<b>Source EUI</b> 216.7 kBtu/ft²	<b>Annual Emissions</b> Greenhouse Gas Emissions (Metric Tons CO2e/year) 3,146	

**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**

Michael Komitas  
130 Great bay Blvd  
Tuckerton, NJ 08087  
4125572813  
michael.komitas@rutgers.edu

Professional Engineer or Registered Architect Stamp (if applicable)

**Site EUI**  
80.6 kBtu/ft²

**Source EUI**  
216.7 kBtu/ft²

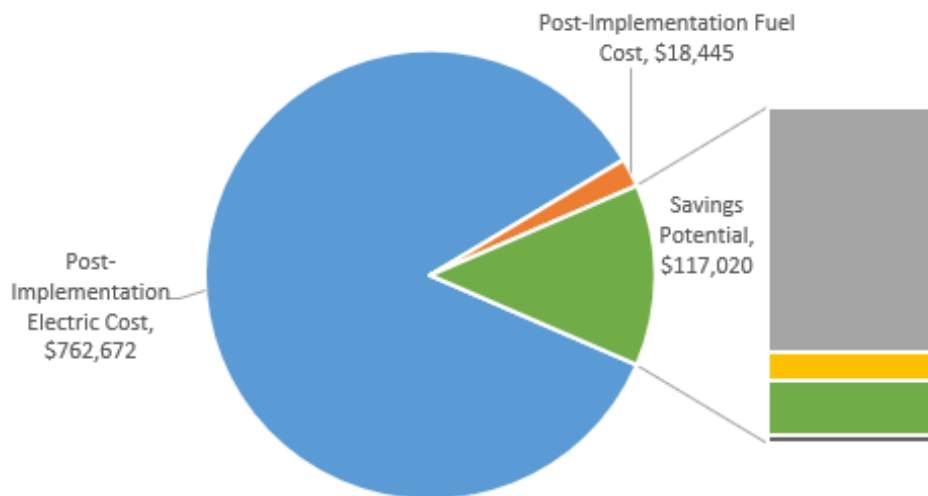
**National Median Comparison**

National Median Site EUI (kBtu/ft²)	67.2
National Median Source EUI (kBtu/ft²)	180.6
% Diff from National Median Source EUI	20%

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.

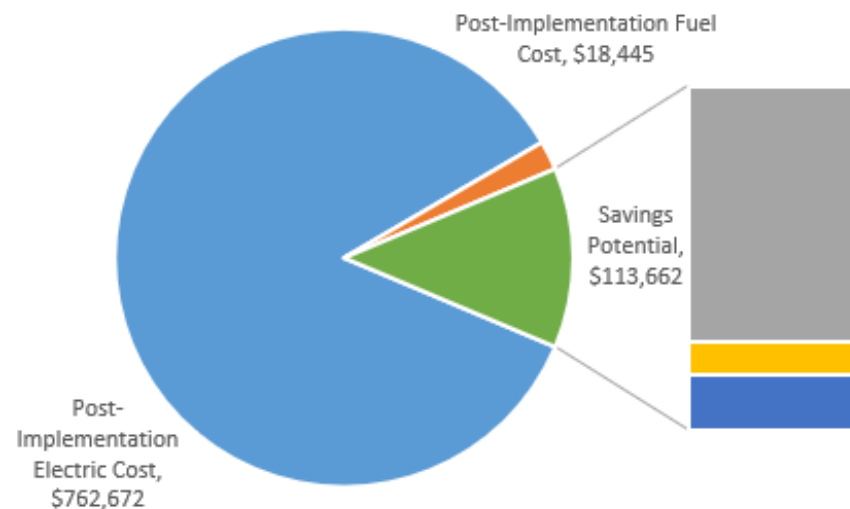
# SAVINGS POTENTIAL

## All Opportunities



- Lighting Upgrades
- Lighting Control Measures
- Variable Frequency Drive (VFD) Measures

## Cost Effective



- Lighting Upgrades
- Lighting Control Measures
- Variable Frequency Drive (VFD) Measures



# ONE WASHINGTON PARK

#	Energy Conservation Measure	Cost Effective?	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)
Lighting Upgrades			866,590	142.6	-181	\$84,841	\$180,708	\$75,640	\$105,068	1.2	851,471
ECM 1	Install LED Fixtures	Yes	4,220	0.2	-1	\$415	\$5,068	\$220	\$4,848	11.7	4,173
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	7,824	1.2	-2	\$766	\$2,627	\$750	\$1,877	2.5	7,688
ECM 3	Retrofit Fixtures with LED Lamps	Yes	854,430	141.2	-179	\$83,648	\$172,868	\$74,670	\$98,198	1.2	839,497
ECM 4	Install LED Exit Signs	Yes	116	0.0	0	\$11	\$145	\$0	\$145	12.8	114
Lighting Control Measures			106,403	15.5	-22	\$10,417	\$64,006	\$43,730	\$20,276	1.9	104,542
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	22,926	3.8	-5	\$2,244	\$21,256	\$5,340	\$15,916	7.1	22,525
ECM 6	Install High/Low Lighting Controls	Yes	83,477	11.7	-17	\$8,172	\$42,750	\$38,390	\$4,360	0.5	82,017
Variable Frequency Drive (VFD) Measures			184,416	33.7	0	\$18,404	\$104,828	\$38,400	\$66,428	3.6	185,706
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	Yes	184,416	33.7	0	\$18,404	\$104,828	\$38,400	\$66,428	3.6	185,706
Gas Heating (HVAC/Process) Replacement			0	0.0	308	\$2,795	\$224,288	\$41,114	\$183,174	65.5	36,037
ECM 8	Install High Efficiency Hot Water Boilers	No	0	0.0	308	\$2,795	\$224,288	\$41,114	\$183,174	65.5	36,037
Domestic Water Heating Upgrade			0	0.0	19	\$172	\$143	\$143	\$0	0.0	2,222
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	19	\$172	\$143	\$143	\$0	0.0	2,222
Food Service & Refrigeration Measures			3,909	0.4	0	\$390	\$920	\$200	\$720	1.8	3,936
ECM 10	Vending Machine Control	Yes	3,909	0.4	0	\$390	\$920	\$200	\$720	1.8	3,936
TOTALS (COST EFFECTIVE MEASURES)			1,161,318	192.4	-184	\$114,224	\$350,606	\$158,113	\$192,493	1.7	1,147,877
TOTALS (ALL MEASURES)			1,161,318	192.4	124	\$117,020	\$574,894	\$199,227	\$375,667	3.2	1,183,914

# 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

## SOLAR PROGRAMS →

### Renewable Energy Generation:

- **SREC Registration Program (SRP)**
- **Community Solar**

## INCENTIVE PROGRAMS →

### Equipment Rebates:

- **SmartStart**
- Customer Tailored Energy Efficiency Pilot (CTEEP)
- Direct Install
- Large Energy Users

### Whole Buildings:

- *Pay for Performance*

### Energy Generation:

- Combined Heat and Power – Fuel Cells

# SOLAR ENERGY GENERATION POTENTIAL

One Washington Park	
<i>Potential:</i>	<b>HIGH</b>
<i>System Potential: (kW)</i>	215
<i>Electric Generation: (kWh per year)</i>	256,145
<i>Displaced Cost: (per year)</i>	\$25,560

SREC Registration Program (SRP):

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

Community Solar Energy Pilot  
Program:

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

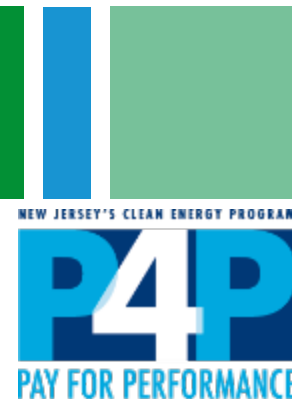
# RECOMMENDED NJCEP INCENTIVES

Energy Conservation Measure		SmartStart	Direct Install	Pay For Performance
ECM 1	Install LED Fixtures	X		X
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	X		X
ECM 3	Retrofit Fixtures with LED Lamps	X		X
ECM 4	Install LED Exit Signs			X
ECM 5	Install Occupancy Sensor Lighting Controls	X		X
ECM 6	Install High/Low Lighting Controls	X		X
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	X		X
ECM 8	Install High Efficiency Hot Water Boilers	X		X
ECM 9	Install Low-Flow DHW Devices	X		X
ECM 10	Vending Machine Control	X		X

The scope of work presented in the audit report does not quite meet the requirements of the current P4P program. However, due to the size of the facility & existing conditions, should additional measures be identified, the facility could potentially qualify for P4P.

# PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



**What is P4P:** Comprehensive, whole-building approach to saving energy in existing or new facilities.

**Qualifications:** Annual peak demand 200 kW+ in the previous year for existing buildings

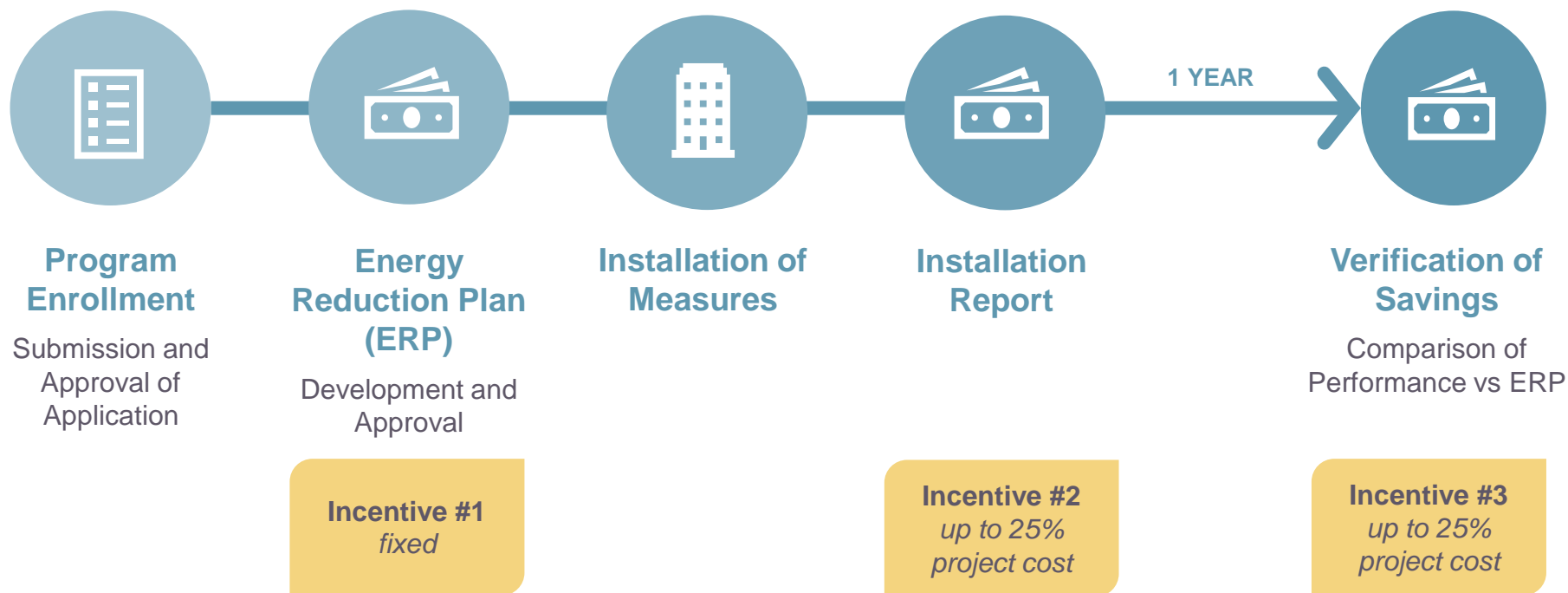
**About:** Customer choose from a network of pre-approved ***Participating Partners***

**Incentives:**

- Incentives paid in three installments
  - Up to \$2MM per project( (\$4MM entity cap/year)
    - \$1 million for electric measures
    - \$1 million for gas measures
  - Up to 50% of project cost (or 80% for UEZ/OZ/Local Govt./ K-12 Public Schools) up to \$2MM per project / \$4MM per entity annually

# PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



# SMARTSTART

NJCleanEnergy.com/SSB

**What is SSB:** Individual high efficiency equipment rebates for new construction, renovation, remodeling, equipment replacement

**Qualifications:** • All C&I customer types contributing into the Societal Benefits Charge (SBC)

**About:**

- Prescriptive and custom designed measures
- Pre-approval required only for lighting projects with incentives >\$100,000 and all custom projects
- For measures not requiring pre-approval, applications must be submitted to the program within one year of purchase.

**Incentives:**

- Prescriptive: \$500,000 cap for each electric or gas account
- Custom, lesser of the following:
  - \$0.16/kWh and/or \$1.60/Therm saved annually
  - 50% of incremental installed cost
  - Buy-down to 1 year payback based on incremental cost and savings





# SMARTSTART

NJCleanEnergy.com/SSB

## Prescriptive Incentives

- Lighting & Lighting Controls
- Packaged HVAC
- Boilers & Water Heaters
- Chillers
- VFD's
- Food Service
- Refrigeration

Prescriptive Only:

**DOUBLE  
INCENTIVES FOR  
OZ/UEZ/ LOCAL  
GOVT./K-12 PUBLIC  
SCHOOLS**

## Custom Incentives

- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Projects must have a minimum first year energy savings of 75,000 kWh or 1,500 therms
- Project pre and post inspection required



# CUSTOMER TAILORED ENERGY EFFICIENCY PILOT

[NJCleanEnergy.com/CTEEP](http://NJCleanEnergy.com/CTEEP)

**What is CTEEP:** A streamlined/single application process for participants submitting multiple different technology types.

**Qualifications:**

- All C&I customer types contributing into the Societal Benefits Charge (SBC)

**About:**

- On site assistance available
- Additional technical incentive available to offset soft costs associated with developing and planning custom projects

**Incentives:**

- \$250,000 fiscal year entity cap
- Technical assistance incentives for custom project evaluation (up to \$10K)

**SAME INCENTIVE  
VALUES AS  
SMARTSTART**

# FOR MORE INFORMATION

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

**Call** (732) 855-0033

**Tony O'Donnell**

Regional Outreach Manager

732.259.4938

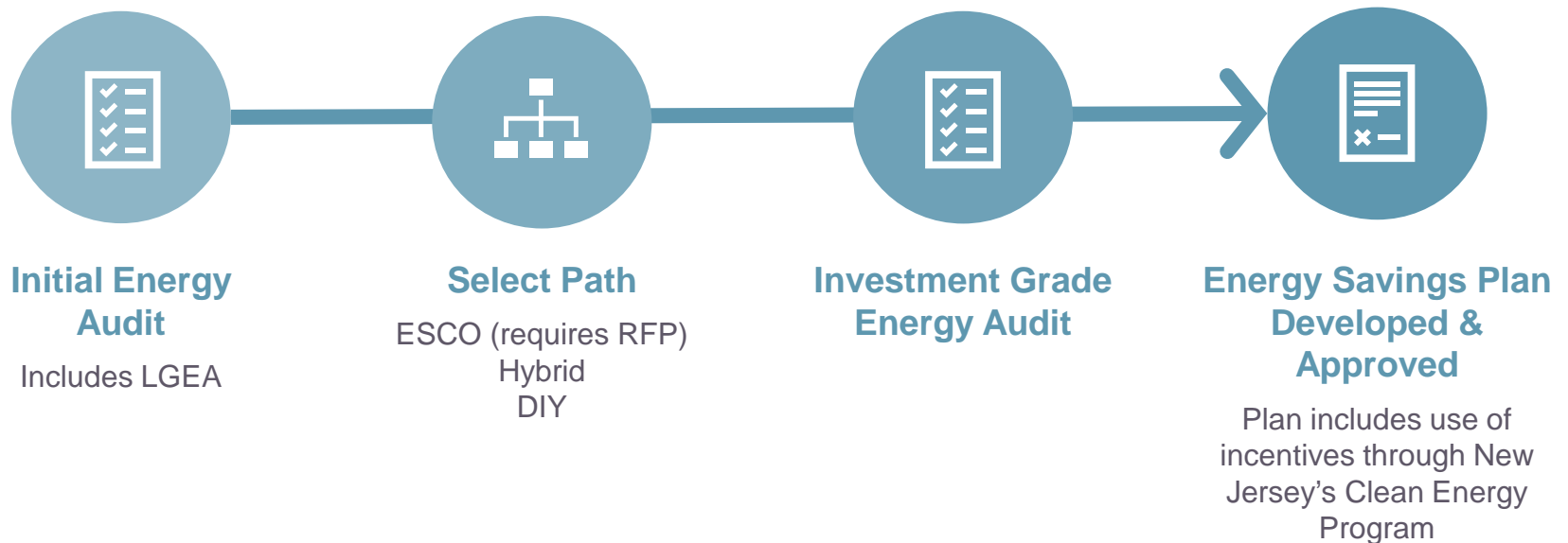
[aodonnell@trccompanies.com](mailto:aodonnell@trccompanies.com)

# FINANCING MECHANISM: ESIP

## ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the BPU
- Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract
- Requires NO new bonding and is outside of capital budget
- Does not count as debt or require voter approval

# FINANCING MECHANISM: ESIP



# ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

## FOR MORE INFORMATION

**Michelle Rossi**

ESIP Coordinator

Office: 609-633-9641

[ESIP@bpu.nj.gov](mailto:ESIP@bpu.nj.gov)

# QUESTIONS

