New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Township of Little Egg Harbor

August 20, 2019





Introductions

Township of Little Egg Harbor

- Matthew Spadaccini Township Administrator
- Brad Griffin Public Works Supervisor

T & M Associates

Jason Worth PE – Group Manager

NJ Clean Energy Program

- Yagna Otia, CEM TRC Auditor
- Sarah Walters TRC Account Manager
- Tony O'Donnell

 TRC Outreach Manager
- Mike Thulen ESIP Coordinator
- Michelle Rossi ESIP Coordinator
- Arif Welcher BPU Government/Business Manager



AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of Energy Conservation Measures (ECMs) identified
- Questions regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Township of Little Egg Harbor



LGEA PROCESS

- Application Approval
- Scheduling Call
- Audit
- Benchmarking & Analysis
- Draft Report
- Exit Meeting Presentation
- Final Report



SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

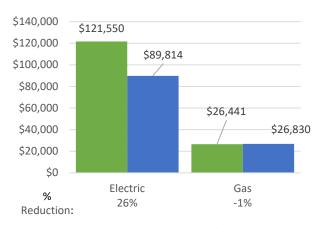
- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

- Municipal Building & Police Complex
- LEHT Community Center
- LEHT Senior Center
- LEHT Dept. of Public Works

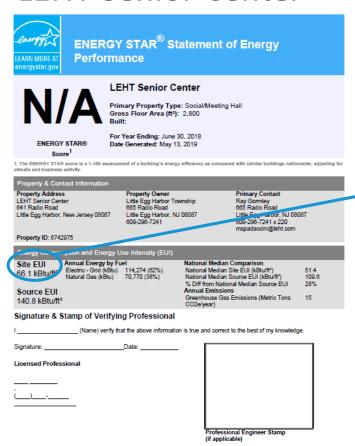


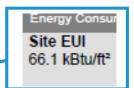




BENCHMARKING

LEHT Senior Center





Building Name	ENERGY STAR® Score
Municipal Building & Police Complex	N/A
LEHT Community Center	N/A
LEHT Senior Center	N/A
LEHT Dept. of Public Works	N/A

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.



ALL OPPORTUNITIES

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	155,544	30.4	-28.4	\$22,861	\$73,025	\$11,837	\$61,188	2.7	153,264
Install LED Fixtures	22,298	3.9	0.0	\$3,694	\$30,808	\$2,990	\$27,818	7.5	22,454
Retrofit Fluorescent Fixtures with LED Lamps and Drivers	364	0.4	-0.1	\$58	\$485	\$75	\$410	7.1	346
Retrofit Fixtures with LED Lamps	132,882	26.2	-28.3	\$19,109	\$41,732	\$8,772	\$32,960	1.7	130,464
Lighting Control Measures	34,854	6.4	-7.6	\$4,989	\$29,026	\$3,184	\$25,842	5.2	34,202
Install Occupancy Sensor Lighting Controls	25,527	4.9	-5.5	\$3,659	\$22,286	\$2,764	\$19,522	5.3	25,059
Install High/Low Lighting Controls	9,327	1.5	-2.1	\$1,330	\$6,740	\$420	\$6,320	4.8	9,143
Variable Frequency Drive (VFD) Measures	20,490	4.9	0.0	\$2,924	\$18,455	\$ 0	\$18,455	6.3	20,633
Install VFDs on Chilled Water Pumps	11,360	3.8	0.0	\$1,621	\$10,303	\$0	\$10,303	6.4	11,440
Install VFDs on Heating Water Pumps	9,129	1.1	0.0	\$1,303	\$8,152	\$0	\$8,152	6.3	9,193
Electric Unitary HVAC Measures	329	0.3	0.0	\$56	\$4,994	\$0	\$4,994	88.8	331
Install High Efficiency Air Conditioning Units	329	0.3	0.0	\$56	\$4,994	\$0	\$4,994	88.8	331
Electric Chiller Replacement	9,399	5.7	0.0	\$1,341	\$97,263	\$2,280	\$94,983	70.8	9,465
Install High Efficiency Chillers	9,399	5.7	0.0	\$1,341	\$97,263	\$2,280	\$94,983	70.8	9,465
Gas Heating (HVAC/Process) Replacement	0	0.0	79.5	\$906	\$39,127	\$3,052	\$36,075	39.8	9,309
Install High Efficiency Hot Water Boilers	0	0.0	79.5	\$906	\$39,127	\$3,052	\$36,075	39.8	9,309
Domestic Water Heating Upgrade	834	0.0	0.0	\$140	\$22	\$0	\$22	0.2	840
Install Low-Flow DHW Devices	834	0.0	0.0	\$140	\$22	\$0	\$22	0.2	840
Food Service Equipment & Refrigeration Measures	753	0.1	0.0	\$127	\$3,488	\$0	\$3,488	27.5	758
Replace Refrigeration Equipment	753	0.1	0.0	\$127	\$3,488	\$0	\$3,488	27.5	758
Plug Load Equipment Control - Vending Machine	3,909	0.4	0.0	\$607	\$920	\$100	\$820	1.4	3,936
Vending Machine Control	3,909	0.4	0.0	\$607	\$920	\$100	\$820	1.4	3,936
TOTALS	226,111	48.3	43.5	\$33,952	\$266,320	\$20,453	\$245,867	7.2	232,738

^{* -} 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).



COST EFFECTIVE OPPORTUNITIES

Energy Conservation Measure	Annual Electric Savings (kWh)	(kW)	Annual Fuel Savings (MMBtu)	(\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Period (yrs)**	CO₂e Emissions Reduction (lbs)
Lighting Upgrades	154,732	30.3	-28.4	\$22,725	\$71,093	\$11,737	\$59,356	2.6	152,447
ECM 1 Install LED Fixtures	21,487	3.7	0.0	\$3,559	\$28,877	\$2,890	\$25,987	7.3	21,637
ECM 2 Retrofit Fluorescent Fixtures with LED Lamps and Drivers	364	0.4	-0.1	\$58	\$485	\$75	\$410	7.1	346
ECM 3 Retrofit Fixtures with LED Lamps	132,882	26.2	-28.3	\$19,109	\$41,732	\$8,772	\$32,960	1.7	130,464
Lighting Control Measures	34,362	6.2	-7.4	\$4,909	\$27,598	\$3,054	\$24,544	5.0	33,728
ECM 4 Install Occupancy Sensor Lighting Controls	25,035	4.7	-5.3	\$3,579	\$20,858	\$2,634	\$18,224	5.1	24,586
ECM 5 Install High/Low Lighting Controls	9,327	1.5	-2.1	\$1,330	\$6,740	\$420	\$6,320	4.8	9,143
Variable Frequency Drive (VFD) Measures	20,490	4.9	0.0	\$2,924	\$18,455	\$0	\$18,455	6.3	20,633
ECM 6 Install VFDs on Chilled Water Pumps	11,360	3.8	0.0	\$1,621	\$10,303	\$0	\$10,303	6.4	11,440
ECM 7 Install VFDs on Heating Water Pumps	9,129	1.1	0.0	\$1,303	\$8,152	\$0	\$8,152	6.3	9,193
Domestic Water Heating Upgrade	834	0.0	0.0	\$140	\$22	\$0	\$22	0.2	840
ECM 8 Install Low-Flow DHW Devices	834	0.0	0.0	\$140	\$22	\$0	\$22	0.2	840
Plug Load Equipment Control - Vending Machine	3,909	0.4	0.0	\$607	\$920	\$100	\$820	1.4	3,936
ECM 9 Vending Machine Control	3,909	0.4	0.0	\$607	\$920	\$100	\$820	1.4	3,936
TOTALS	214,327	41.8	-35.8	\$31,306	\$118,088	\$14,891	\$103,197	3.3	211,584

^{* -} 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.



 $^{^{\}star\star}$ - Simple Payback Period is based on net measure costs (i.e. after incentives).

Municipal Building & Police Complex

<u> </u>											
#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)		Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)		Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting	Upgrades		118,731	20.5	-24	\$16,669	\$38,410	\$7,233	\$31,177	1.9	116,742
ECM 1	Install LED Fixtures	Yes	3,673	0.7	0	\$524	\$3,832	\$290	\$3,542	6.8	3,698
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	37	0.0	0	\$5	\$51	\$5	\$46	8.7	37
ECM 3	Retrofit Fixtures with LED Lamps	Yes	115,021	19.8	-24	\$16,140	\$34,527	\$6,938	\$27,589	1.7	113,007
Lighting	Control Measures		30,935	5.2	-7	\$4,340	\$24,008	\$2,319	\$21,689	5.0	30,380
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	22,443	4.0	-5	\$3,148	\$18,158	\$2,319	\$15,839	5.0	22,040
ECM 5	Install High/Low Lighting Controls	Yes	8,493	1.2	-2	\$1,191	\$5,850	\$0	\$5,850	4.9	8,341
Variable	Frequency Drive (VFD) Measures		20,490	4.9	0	\$2,924	\$18,455	\$0	\$18,455	6.3	20,633
ECM 6	Install VFDs on Chilled Water Pumps	Yes	11,360	3.8	0	\$1,621	\$10,303	\$0	\$10,303	6.4	11,440
ECM 7	Install VFDs on Heating Water Pumps	Yes	9,129	1.1	0	\$1,303	\$8,152	\$0	\$8,152	6.3	9,193
Electric (Chiller Replacement		9,399	5.7	0	\$1,341	\$97,263	\$2,280	\$94,983	70.8	9,465
ECM 8	Install High Efficiency Chillers	No	9,399	5.7	0	\$1,341	\$97,263	\$2,280	\$94,983	70.8	9,465
Gas Hea	ting (HVAC/Process) Replacement		0	0.0	80	\$906	\$39,127	\$3,052	\$36,075	39.8	9,309
ECM 9	Install High Efficiency Hot Water Boilers	No	0	0.0	80	\$906	\$39,127	\$3,052	\$36,075	39.8	9,309
Food Se	rvice & Refrigeration Measures		1,954	0.2	0	\$279	\$460	\$50	\$410	1.5	1,968
ECM 10	Vending Machine Control	Yes	1,954	0.2	0	\$279	\$460	\$50	\$410	1.5	1,968
	TOTALS (COST EFFECTIVE MEASURES)		172,110	30.8	-31	\$24,211	\$81,333	\$9,602	\$71,731	3.0	169,723
	TOTALS (ALL MEASURES)		181,509	36.6	49	\$26,459	\$217,723	\$14,934	\$202,789	7.7	188,497



LEHT COMMUNITY CENTER

#	Energy Conservation Measure	Cost Effective?		Peak Demand Savings (kW)		Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)		Net Cost		CO₂e Emissions Reduction (lbs)
Lighting	Upgrades		9,670	2.6	-2	\$1,591	\$4,874	\$867	\$4,007	2.5	9,517
ECM 1	Install LED Fixtures	No	812	0.2	0	\$135	\$1,932	\$100	\$1,832	13.5	817
ECM 2	Retrofit Fixtures with LED Lamps	Yes	8,859	2.4	-2	\$1,456	\$2,942	\$767	\$2,175	1.5	8,700
Lighting	Control Measures		2,177	0.5	0	\$358	\$1,620	\$175	\$1,445	4.0	2,138
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	2,177	0.5	0	\$358	\$1,620	\$175	\$1,445	4.0	2,138
Food Se	rvice & Refrigeration Measures		643	0.1	0	\$107	\$1,630	\$0	\$1,630	15.2	648
ECM 4	Replace Refrigeration Equipment	No	643	0.1	0	\$107	\$1,630	\$0	\$1,630	15.2	648
	TOTALS (COST EFFECTIVE MEASURES)		11,036	2.9	-2	\$1,814	\$4,562	\$942	\$3,620	2.0	10,838
	TOTALS (ALL MEASURES)		12,491	3.1	-2	\$2,056	\$8,124	\$1,042	\$7,082	3.4	12,303

^{* -} All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.



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LEHT SENIOR CENTER

#	Energy Conservation Measure	Cost Effecitve?		Peak Demand Savings (kW)		Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)				CO ₂ e Emissions Reduction (Ibs)
Lighting	Upgrades		7,519	2.1	-1	\$1,335	\$7,510	\$1,062	\$6,448	4.8	7,486
ECM 1	Install LED Fixtures	Yes	3,737	0.7	0	\$669	\$5,796	\$600	\$5,196	7.8	3,763
ECM 2	Retrofit Fixtures with LED Lamps	Yes	3,781	1.4	-1	\$666	\$1,714	\$462	\$1,252	1.9	3,722
Lighting	Control Measures		755	0.3	0	\$133	\$1,530	\$140	\$1,390	10.5	742
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	415	0.2	0	\$73	\$1,080	\$140	\$940	12.9	408
ECM 4	Install High/Low Lighting Controls	Yes	340	0.1	0	\$60	\$450	\$0	\$450	7.5	334
Electric l	Unitary HVAC Measures		90	0.1	0	\$16	\$2,635	\$0	\$2,635	163.7	91
ECM 5	Install High Efficiency Air Conditioning Units	No	90	0.1	0	\$16	\$2,635	\$0	\$2,635	163.7	91
Food Se	rvice & Refrigeration Measures		110	0.0	0	\$20	\$1,858	\$0	\$1,858	94.8	110
ECM 6	Replace Refrigeration Equipment	No	110	0.0	0	\$20	\$1,858	\$0	\$1,858	94.8	110
	TOTALS (COST EFFECTIVE MEASURES)		8,274	2.4	-1	\$1,468	\$9,040	\$1,202	\$7,838	5.3	8,228
	TOTALS (ALL MEASURES)		8,473	2.6	-1	\$1,504	\$13,533	\$1,202	\$12,331	8.2	8,428

^{* -} All incentives presented in this table are based on NJ SmartStart 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).

LEHT DEPT. OF PUBLIC WORKS

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)		Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)		Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO₂e Emissions Reduction (lbs)
Lighting	Upgrades		19,624	5.2	-2	\$3,265	\$22,231	\$2,675	\$19,556	6.0	19,520
ECM 1	Install LED Fixtures	Yes	14,077	2.4	0	\$2,366	\$19,249	\$2,000	\$17,249	7.3	14,175
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	327	0.4	0	\$52	\$434	\$70	\$364	7.0	310
ECM 3	Retrofit Fixtures with LED Lamps	Yes	5,221	2.5	-2	\$847	\$2,548	\$605	\$1,943	2.3	5,035
Lighting	Control Measures		986	0.4	0	\$159	\$1,868	\$550	\$1,318	8.3	941
ECM 4	Install Occupancy Sensor Lighting Controls	No	492	0.2	0	\$80	\$1,428	\$130	\$1,298	16.3	474
ECM 5	Install High/Low Lighting Controls	Yes	494	0.2	0	\$79	\$440	\$420	\$20	0.3	468
Electric	Unitary HVAC Measures		239	0.2	0	\$40	\$2,359	\$0	\$2,359	58.7	241
ECM 6	Install High Efficiency Air Conditioning Units	No	239	0.2	0	\$40	\$2,359	\$0	\$2,359	58.7	241
Domest	ic Water Heating Upgrade		834	0.0	0	\$140	\$22	\$0	\$22	0.2	840
ECM 7	Install Low-Flow DHW Devices	Yes	834	0.0	0	\$140	\$22	\$0	\$22	0.2	840
Food Se	rvice & Refrigeration Measures		1,954	0.2	0	\$328	\$460	\$50	\$410	1.2	1,968
ECM 8	Vending Machine Control	Yes	1,954	0.2	0	\$328	\$460	\$50	\$410	1.2	1,968
	TOTALS (COST EFFECTIVE MEASURES)		22,906	5.7	-2	\$3,813	\$23,153	\$3,145	\$20,008	5.2	22,795
	TOTALS (ALL MEASURES)		23,637	6.0	-2	\$3,933	\$26,940	\$3,275	\$23,665	6.0	23,510



Solar Energy Generation Potential

	Municipal Bldg. & Police Complex
Potential:	HIGH
System Potential: (kW)	129
Electric Generation: (kWh per year)	153,687
Displaced Cost: (per year)	\$21,930

SREC Registration Program (SRP):

http://www.NJCleanEnergy.com/SREC

Community Solar Energy Pilot Program:

http://www.NJCleanEnergy.com/Com munitySolar



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

INCENTIVE PROGRAMS

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

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 (CHP)

OTHER PROGRAMS



Renewable Energy Generation:

SREC Registration Program (SRP)

RECOMMENDED NJCEP INCENTIVES PER BUILDING

Entity Name	Direct Install	SmartStart	СТЕЕР
Municipal Building & Police Complex	Х	X	Х
LEHT Community Center	X	X	Х
LEHT Senior Center	X	X	Х
LEHT Dept. of Public Works	X	X	X



DIRECT INSTALL

NJCleanEnergy.com/DI

What is DI:

Turn-key retrofit program to replace outdated and inefficient equipment, including lighting, HVAC, refrigeration, etc.



Qualifications: Average electric peak demand <200 kW in the previous 12 months

About:

- Pre-approved participating contractors provide support and process paperwork
- Incentives paid directly to the contractor
- Fast project turnaround time (4-6 months)

Incentives:

- \$125,000 incentive funding per project/building (\$250K UEZ/OZ/MUNI/K-12 Public Schools), or
- \$250,000 entity cap (\$4MM UEZ/OZ/MUNI/K-12 Public School)



DIRECT INSTALL

NJCleanEnergy.com/DI

Facilities in Urban Enterprise Zones (UEZ), Opportunity Zones (OZ), municipalities, and K-12 public schools:

INCENTIVE FUNDING

CUSTOMER

Up to **80%** of installed cost is paid directly to the contractor

20% of installed cost

All other eligible facilities:

INCENTIVE FUNDING

CUSTOMER

Up to **70%** of installed cost is paid directly to the contractor

30% of installed cost



DIRECT INSTALL

NJCleanEnergy.com/DI

Participating Contractor

Hutchinson Mechanical Services

Pete Hatton 856-429-5828 x259

petehatton@hutchbiz.com



DIRECT INSTALL: FINANCING OPTION

- Eligible NJNG customers can <u>finance</u>
 the remaining 30 percent balance at
 O% APR through the "SAVEGREEN
 Project® On-Bill Repayment Program"
 (OBRP) for 36 months.
- For measures that may not qualify for Direct Install, NJNG also offers financing options for SmartStart that will cover up to \$130,000 per year.



Questions? Contact:

Jerry Ryan

Energy Efficiency Ops. Manager New Jersey Natural Gas 732-433-4362 (cell) 732 378 4920 (office) jryan@njng.com



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 <u>all</u> 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-dwon 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/ MUNI/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

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



SMARTSTART & CTEEP: FINANCING OPTION

- NJNG provides 0% financing options that will cover up to \$130,000 per year.
- 10 year term-repayments made on regular monthly gas bill
- Need to review project with NJNG to confirm project qualifies.
- The SAVEGREEN program can help with a consultation to discuss your Commercial Energy Efficiency Project.



Questions? Contact:

Jerry Ryan

Energy Efficiency Ops. Manager New Jersey Natural Gas 732-433-4362 (cell) 732 378 4920 (office) jryan@njng.com



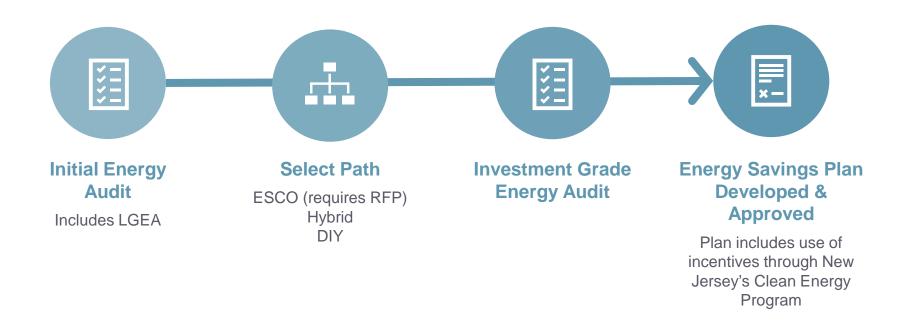
FINANCING MECHANISM: ESIP

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

Mike Thulen / Michelle Rossi

ESIP Coordinator

Office: 609-777-3338 / 609-633-9641

Mike's Cell: 732-330-2419

ESIP@bpu.nj.gov



FOR MORE INFORMATION

Visit NJCleanEnergy.com
Call (732) 855-0033

Tony O'Donnell

Regional Outreach Manager 732.259.4938 aodonnell@trccompanies.com



QUESTIONS



