

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Southern Ocean Medical Center

TRC Energy Services

April 26, 2019

Introductions



Southern Ocean Medical Center

- Anthony Massari – Plant Operations Manager
- Regina Foley – Chief Operating Officer
- Michele Morrison – Senior Manager of Operations
- Kyle Tafuri – Director of Sustainability

NJ Clean Energy Program

- Brian DeLuca, CEM – TRC Program Manager
- Moussa Traore – TRC Auditor
- Sarah Walters – TRC Account Manager
- Tony O'Donnell – Outreach Manager
- Arif Welcher – BPU Ombudsman
- Mike Thulen – ESIP Coordinator

Agenda



- The audit process overview
- 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 Southern Ocean Medical Center

LGEA Process



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



Overview of Systems, Baseline & Existing Conditions:

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

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Benchmarking



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT
energystar.gov

77

ENERGY STAR®
Score¹

HMH Southern Ocean Medical Center

Primary Property Type: Hospital (General Medical & Surgical)
Gross Floor Area (ft²): 328,478
Built: 1972

For Year Ending: April 30, 2018
Date Generated: February 12, 2019

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 HMH Southern Ocean Medical Center 1140 W Route 72 Manahawkin, New Jersey 08050	Property Owner _____ () - ____	Primary Contact _____ () - ____	
Property ID: 6650511			

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 130.5 kBtu/ft ²	Annual Energy by Fuel Electric - Grid (kBtu) 42,865,681 (100%)	National Median Comparison National Median Site EUI (kBtu/ft ²) 150.9 National Median Source EUI (kBtu/ft ²) 422.4 % Diff from National Median Source EUI -14%	
Source EUI 365.4 kBtu/ft ²		Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 4,343	

Signature & Stamp of Verifying Professional

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

Signature: _____ Date: _____

Licensed Professional

() - ____

Professional Engineer 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.

All Opportunities



#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Lifetime Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		818,042	96.0	-172	\$135,725	\$2,035,871	\$131,652	\$19,727	\$111,925	0.8	803,640
ECM 1	Install LED Fixtures	1,793	0.3	0	\$301	\$4,514	\$2,898	\$300	\$2,598	8.6	1,806
ECM 2	Retrofit Fixtures with LED Lamps	816,249	95.7	-172	\$135,424	\$2,031,357	\$128,754	\$19,427	\$109,327	0.8	801,834
Lighting Control Measures		11,609	1.3	-2	\$1,926	\$15,406	\$6,210	\$455	\$5,755	3.0	11,400
ECM 3	Install Occupancy Sensor Lighting Controls	11,609	1.3	-2	\$1,926	\$15,406	\$6,210	\$455	\$5,755	3.0	11,400
Motor Upgrades		115,662	23.2	0	\$19,409	\$291,139	\$165,948	\$0	\$165,948	8.5	116,471
ECM 4	Premium Efficiency Motors	115,662	23.2	0	\$19,409	\$291,139	\$165,948	\$0	\$165,948	8.5	116,471
Variable Frequency Drive (VFD) Measures		728,324	139.6	200	\$124,022	\$1,860,331	\$258,318	\$35,380	\$222,938	1.8	756,803
ECM 5	Install VFDs on Constant Volume (CV) Fans	415,287	94.3	0	\$69,689	\$1,045,339	\$145,039	\$26,080	\$118,959	1.7	418,191
ECM 6	Install VFDs on Chilled Water Pumps	119,944	19.0	0	\$20,128	\$301,916	\$37,088	\$4,800	\$32,288	1.6	120,782
ECM 7	Install VFDs on Heating Water Pumps	143,681	11.4	0	\$24,111	\$361,667	\$61,759	\$0	\$61,759	2.6	144,686
ECM 8	Install VFDs on Boiler Feedwater Pumps	33,285	14.9	0	\$5,586	\$83,784	\$11,424	\$3,600	\$7,824	1.4	33,518
ECM 9	Install VFDs on Kitchen Hood Fan Motors	16,126	0.0	200	\$4,508	\$67,625	\$3,008	\$900	\$2,108	0.5	39,625
Electric Unitary HVAC Measures		223,278	56.0	0	\$37,468	\$562,024	\$841,595	\$6,281	\$835,314	22.3	224,840
	Install High Efficiency Air Conditioning Units	148,887	52.3	0	\$24,985	\$374,771	\$470,943	\$2,527	\$468,416	18.7	149,928
	Install High Efficiency Heat Pumps	74,391	3.7	0	\$12,484	\$187,253	\$370,651	\$3,754	\$366,898	29.4	74,911
Electric Chiller Replacement		290,012	136.5	0	\$48,667	\$973,336	\$236,334	\$21,600	\$214,734	4.4	292,040
ECM 10	Install High Efficiency Chillers	290,012	136.5	0	\$48,667	\$973,336	\$236,334	\$21,600	\$214,734	4.4	292,040
Gas Heating (HVAC/Process) Replacement		0	0.0	2,279	\$20,567	\$411,334	\$295,840	\$800	\$295,040	14.3	266,877
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,188	\$19,741	\$394,818	\$286,777	\$0	\$286,777	14.5	256,161
ECM 12	Install High Efficiency Furnaces	0	0.0	92	\$826	\$16,515	\$9,063	\$800	\$8,263	10.0	10,715
HVAC System Improvements		9,074	0.0	240	\$3,685	\$54,217	\$7,017	\$0	\$7,017	1.9	37,194
ECM 13	Implement Demand Control Ventilation (DCV)	9,074	0.0	210	\$3,421	\$51,314	\$6,797	\$0	\$6,797	2.0	33,769
ECM 14	Install Pipe Insulation	0	0.0	29	\$264	\$2,903	\$220	\$0	\$220	0.8	3,425
Food Service & Refrigeration Measures		35,120	3.1	0	\$5,893	\$80,033	\$9,924	\$735	\$9,189	1.6	35,365
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	14,068	1.7	0	\$2,361	\$35,410	\$2,426	\$160	\$2,266	1.0	14,166
ECM 16	Refrigeration Controls	14,605	0.6	0	\$2,451	\$39,214	\$6,578	\$375	\$6,203	2.5	14,707
ECM 17	Vending Machine Control	6,447	0.7	0	\$1,082	\$5,410	\$920	\$200	\$720	0.7	6,492
TOTALS		2,231,120	455.7	2,544	\$397,362	\$6,283,691	\$1,952,837	\$84,978	\$1,867,860	4.7	2,544,629

* - 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).

Cost Effective Opportunities*

* Opportunities considered cost effective have a payback period less than 2/3rds of the useful life of the measure

#	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		818,042	96.0	-172	\$135,725	\$131,652	\$19,727	\$111,925	0.8	803,640
ECM 1	Install LED Fixtures	1,793	0.3	0	\$301	\$2,898	\$300	\$2,598	8.6	1,806
ECM 2	Retrofit Fixtures with LED Lamps	816,249	95.7	-172	\$135,424	\$128,754	\$19,427	\$109,327	0.8	801,834
Lighting Control Measures		11,609	1.3	-2	\$1,926	\$6,210	\$455	\$5,755	3.0	11,400
ECM 3	Install Occupancy Sensor Lighting Controls	11,609	1.3	-2	\$1,926	\$6,210	\$455	\$5,755	3.0	11,400
Motor Upgrades		115,662	23.2	0	\$19,409	\$165,948	\$0	\$165,948	8.5	116,471
ECM 4	Premium Efficiency Motors	115,662	23.2	0	\$19,409	\$165,948	\$0	\$165,948	8.5	116,471
Variable Frequency Drive (VFD) Measures		728,324	139.6	200	\$124,022	\$258,318	\$35,380	\$222,938	1.8	756,803
ECM 5	Install VFDs on Constant Volume (CV) Fans	415,287	94.3	0	\$69,689	\$145,039	\$26,080	\$118,959	1.7	418,191
ECM 6	Install VFDs on Chilled Water Pumps	119,944	19.0	0	\$20,128	\$37,088	\$4,800	\$32,288	1.6	120,782
ECM 7	Install VFDs on Heating Water Pumps	143,681	11.4	0	\$24,111	\$61,759	\$0	\$61,759	2.6	144,686
ECM 8	Install VFDs on Boiler Feedwater Pumps	33,285	14.9	0	\$5,586	\$11,424	\$3,600	\$7,824	1.4	33,518
ECM 9	Install VFDs on Kitchen Hood Fan Motors	16,126	0.0	200	\$4,508	\$3,008	\$900	\$2,108	0.5	39,625
Electric Chiller Replacement		290,012	136.5	0	\$48,667	\$236,334	\$21,600	\$214,734	4.4	292,040
ECM 10	Install High Efficiency Chillers	290,012	136.5	0	\$48,667	\$236,334	\$21,600	\$214,734	4.4	292,040
Gas Heating (HVAC/Process) Replacement		0	0.0	2,279	\$20,567	\$295,840	\$800	\$295,040	14.3	266,877
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,188	\$19,741	\$286,777	\$0	\$286,777	14.5	256,161
ECM 12	Install High Efficiency Furnaces	0	0.0	92	\$826	\$9,063	\$800	\$8,263	10.0	10,715
HVAC System Improvements		9,074	0.0	240	\$3,685	\$7,017	\$0	\$7,017	1.9	37,194
ECM 13	Implement Demand Control Ventilation (DCV)	9,074	0.0	210	\$3,421	\$6,797	\$0	\$6,797	2.0	33,769
ECM 14	Install Pipe Insulation	0	0.0	29	\$264	\$220	\$0	\$220	0.8	3,425
ECM 0	Install Low-Flow DHW Devices	0	0.0	0	\$0	\$0	\$0	\$0	0.0	0
Food Service & Refrigeration Measures		35,120	3.1	0	\$5,893	\$9,924	\$735	\$9,189	1.6	35,365
ECM 15	Refrigerator/Freezer Case Electrically Commutated Motors	14,068	1.7	0	\$2,361	\$2,426	\$160	\$2,266	1.0	14,166
ECM 16	Refrigeration Controls	14,605	0.6	0	\$2,451	\$6,578	\$375	\$6,203	2.5	14,707
ECM 17	Vending Machine Control	6,447	0.7	0	\$1,082	\$920	\$200	\$720	0.7	6,492
TOTALS		2,007,842	399.7	2,544	\$359,894	\$1,111,242	\$78,697	\$1,032,545	2.9	2,319,790

* - 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).

Solar Energy Generation Potential

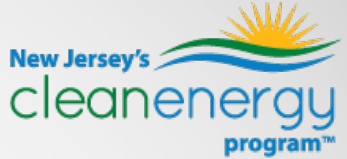


<i>Southern Ocean Medical Center</i>	
<i>Potential:</i>	HIGH
<i>System Potential (kW):</i>	1,825
<i>Electric Generation: (kWh per year)</i>	2,174,251
<i>Displaced Cost: (per year)</i>	\$364,860

For more information on the SREC Registration Program (SRP) please visit:

<http://www.njcleanenergy.com/renewable-energy/programs/solar-renewable-energy-certificates-srec/new-jersey-solar-renewable-energy>

Combined Heat & Power Potential



<i>Southern Ocean Medical Center</i>	
<i>Potential:</i>	HIGH
<i>System Potential (kW):</i>	460
<i>Electric Generation: (kWh per year)</i>	3,710,980
<i>Thermal Generation: (MBtu per year)</i>	17,062,352
<i>Displaced Cost: (per year)</i>	\$44,965

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

INCENTIVE PROGRAMS

Equipment Rebates:

- SmartStart
- CTEEP
(Customer Tailored Energy Efficiency Pilot)
- 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)

* eligible programs are highlighted in yellow

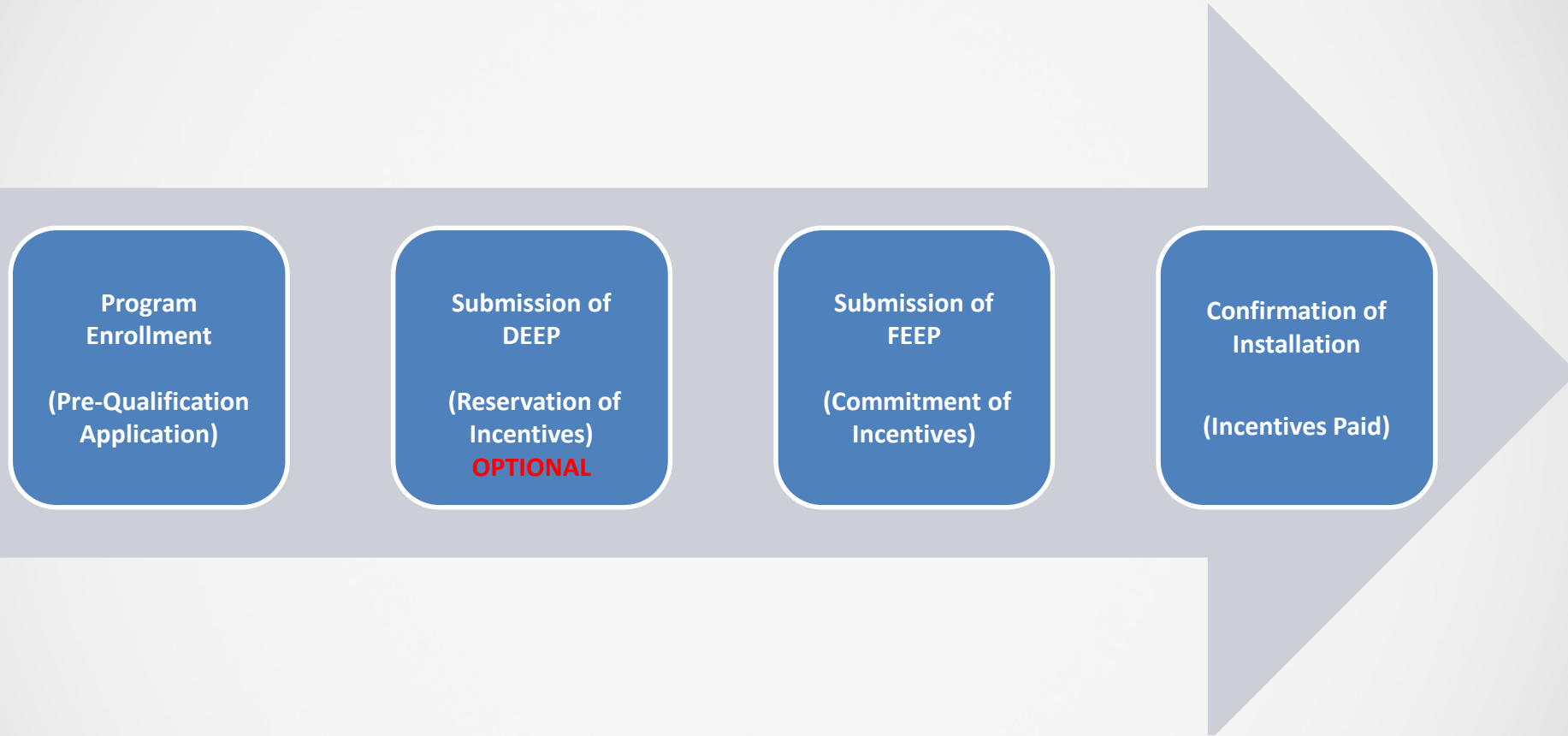
Large Energy Users: Overview



- The Large Energy Users Program (LEUP) encourages large C&I utility customers to self-invest in energy efficiency and combined heat & power projects
- Qualifications:
 - Applicants must have paid a minimum of \$200,000 NJCEP funds (via the SBC) in the previous 12 months of utility bills
 - Ability to “bank” funds for up to two fiscal years
 - The average peak demand of all facilities submitted must meet or exceed 400kW and/or 4,000 DTh
- Maximum incentive per entity is \$4 million or 75% of total project cost, 90% of NJCEP contribution or annual energy saving caps (\$0.33/kWh and \$3.75/Therm), whichever is less

www.NJCleanEnergy/LEUP

Large Energy Users: Process



Customers may submit up to three Draft Energy Efficiency Plans (DEEPs) or Final Energy Efficiency Plans (FEEPs) within the fiscal year enrolled

Pay for Performance: Overview



- Comprehensive, whole-building approach to saving energy in existing or new facilities
- Qualification based on energy consumption, energy savings and measure types
- Customer chooses from network of pre-approved ***Participating Partners***
- Incentives paid in three installments at milestones
 - Incentives up to \$2MM per project (\$4MM entity cap/year)
 - \$1 million for electric measures
 - \$1 million for gas measures
 - Incentives up to 50% of total project cost

www.NJCleanEnergy/P4P

Pay for Performance: Process



Submittal and Approval of Application

Development and Approval of Energy Reduction Plan (ERP)

Installation of Recommended Measures

Submittal and Approval of As-Built ERP and Cx Report

Post Construction Verification of Savings

Incentive #1
fixed between \$3,750-\$25,000

Incentive #2
up to 25% project cost

Incentive #3
up to 25% project cost

1 year

Pay for Performance: Details



Incentive #1: Energy Reduction Plan			
Incentive Amount:		\$0.15	per sq ft
Minimum Incentive:		\$3,750	
Maximum Incentive:		\$25,000	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

SmartStart: Overview



- Two types of incentives for high efficiency equipment installation:
 - Prescriptive
 - Custom
- Project Categories:
 - New Construction
 - Renovation
 - Remodeling
 - Equipment Replacement
- Project pre-approval required for lighting and custom measures
- Incentives up to \$500,000 per electric account & \$500,000 per natural gas account
- Specific incentives and individual applications for Lighting, HVAC, VFDs, Refrigeration, Controls and more!

www.NJCleanEnergy/SSB

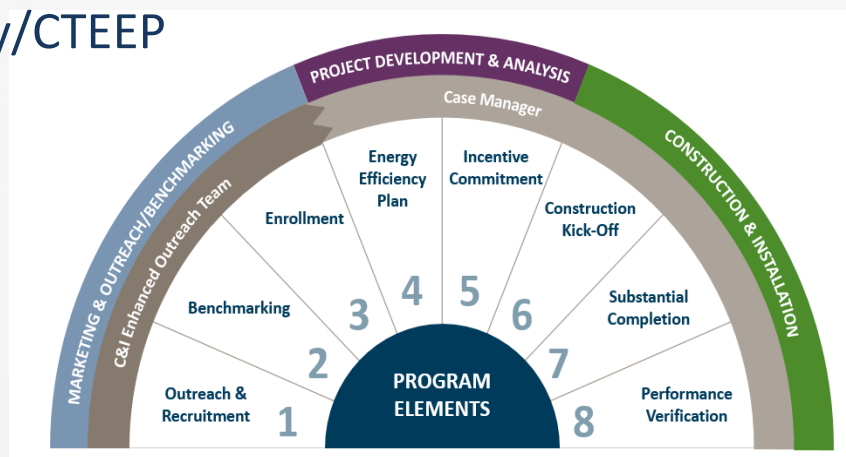
CTEEP: Overview



Customer Tailored Energy Efficiency Pilot (CTEEP)

- Provide customers with **on-site assistance** to discuss project opportunities and program incentives.
- A **single application** submission streamlines multiple prescriptive and custom measures.
- Provide **technical assistance incentives** to help offset soft costs associated with developing and planning an energy efficiency project.
- Incentives up to \$250,000 entity cap.

www.NJCleanEnergy/CTEEP



SmartStart, CTEEP, P4P:



- NJNG provides 0% financing options for SmartStart 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 Operations
Manager

New Jersey Natural Gas

732-433-4362 (cell)

732 378 4920 (office)

jryan@njng.com



CHP: OVERVIEW



Combined Heat and Power (CHP)

- Enhanced alternative to emergency generators
- On-site power generation with recovery and productive use of waste heat
- System provides building heating and cooling
- Resiliency with Return on Investment
- Technology-neutral incentives
- 30/50/20 Incentive payment
 - 30% when equipment purchased
 - 50% when system installed
 - 20% upon acceptance and confirmation that the project is achieving the required performance

CHP: OVERVIEW



Eligible Technologies	Size (Installed Rated Capacity) ¹	Incentive (\$/kW)	% of Total Cost Cap per Project ³	\$ Cap per Project ³
Powered by non-renewable or renewable fuel source ⁴	≤500 kW	\$2,000	30-40% ²	\$2 million
	Gas Internal Combustion Engine	>500 kW - 1 MW		
Gas Combustion Turbine	> 1 MW - 3 MW	\$550	30%	\$3 million
Microturbine				
Fuel Cells with Heat Recovery	>3 MW	\$350		
Waste Heat to Power ⁵	<1 MW	\$1,000	30%	\$2 million
	> 1MW	\$500		\$3 million

⁵Waste Heat to Power: Powered by non-renewable fuel source, heat recovery or other mechanical recovery from existing equipment utilizing new electric generation equipment (e.g. steam turbine).

Questions



?



FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

Tony O'Donnell

Regional Outreach Manager

732.259.4938

aodonnell@trcsolutions.com