

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Bayshore Community Hospital

TRC Energy Services

April 23, 2019



HMH Bayshore Community Hospital

- Gary Sypniewski – Plant Operations Manager
- Frank Citara – Chief Operating Officer
- Caitlyn Miller – Sr. Manager of Operations
- Frank Tsemberlis– Central VP of Facilities
- Bob Mulcahy– Southern VP of Facilities
- Kyle Tafuri– Director of Sustainability

NJ Clean Energy Program

- Brian DeLuca, CEM – TRC Program Manager
- Vish Nimbalkar, PE – TRC Lead Auditor
- Sarah Walters – TRC Account Manager
- Mike Thulen – ESIP Coordinator
- Arif Welcher – BPU Ombudsman

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 Bayshore Community Hospital

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

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Benchmarking





ENERGY STAR® Statement of Energy Performance

65

ENERGY STAR® Score¹

Bayshore Community Hospital

Primary Property Type: Hospital (General Medical & Surgical)
 Gross Floor Area (ft²): 335,494
 Built: 1970

For Year Ending: May 31, 2018
 Date Generated: February 27, 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	Property Owner	Primary Contact
Bayshore Community Hospital 727 North Beers Street Holmdel, New Jersey 07733	() - () - ()	() - () - ()

Property ID: 0065530

Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison
237.7 kBtu/ft ²	Natural Gas (kBtu) 48,874,009 (81%) Electric - Grid (kBtu) 30,879,735 (39%)	National Median Site EUI (kBtu/ft ²) 256.7 National Median Source EUI (kBtu/ft ²) 443.5 % Diff from National Median Source EUI -7%
Source EUI 410.7 kBtu/ft ²		Annual Emissions Greenhouse Gas Emissions (Metric Tons CO ₂ /year) 5,724

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		463,473	60.3	-76	\$44,801	\$672,011	\$195,583	\$24,591	\$170,992	3.8	457,863
ECM 1	Install LED Fixtures	126,539	21.8	-4	\$12,378	\$185,673	\$144,562	\$16,500	\$128,062	10.3	126,936
ECM 2	Retrofit Fixtures with LED Lamps	336,934	38.5	-71	\$32,423	\$486,338	\$51,021	\$8,091	\$42,930	1.3	330,927
Lighting Control Measures		58,153	6.7	-12	\$5,595	\$44,764	\$30,528	\$3,565	\$26,963	4.8	57,110
ECM 3	Install Occupancy Sensor Lighting Controls	48,495	5.6	-10	\$4,666	\$37,330	\$28,128	\$3,565	\$24,563	5.3	47,625
ECM 4	Install Daylight Dimming Controls	9,658	1.1	-2	\$929	\$7,434	\$2,400	\$0	\$2,400	2.6	9,484
Motor Upgrades		114,182	15.1	0	\$11,203	\$168,044	\$196,155	\$0	\$196,155	17.5	114,981
	Premium Efficiency Motors	114,182	15.1	0	\$11,203	\$168,044	\$196,155	\$0	\$196,155	17.5	114,981
Variable Frequency Drive (VFD) Measures		590,912	96.7	0	\$57,977	\$869,655	\$201,335	\$26,565	\$174,770	3.0	595,044
ECM 5	Install VFDs on Constant Volume (CV) Fans	251,239	36.0	0	\$24,650	\$369,752	\$67,528	\$12,240	\$55,288	2.2	252,995
ECM 6	Install VFDs on Chilled Water Pumps	223,739	47.4	0	\$21,952	\$329,281	\$91,406	\$10,500	\$80,906	3.7	225,303
ECM 7	Install VFDs on Heating Water Pumps	81,756	6.6	0	\$8,021	\$120,322	\$31,580	\$0	\$31,580	3.9	82,328
ECM 8	Install Boiler Draft Fan VFDs	20,768	4.5	0	\$2,038	\$30,564	\$7,214	\$2,325	\$4,889	2.4	20,913
ECM 9	Install VFDs on Kitchen Hood Fan Motors	13,410	2.2	0	\$1,316	\$19,736	\$3,607	\$1,500	\$2,107	1.6	13,504
Electric Chiller Replacement		650,654	306.1	0	\$63,839	\$1,276,773	\$573,686	\$41,100	\$532,586	8.3	655,204
ECM 10	Install High Efficiency Chillers	650,654	306.1	0	\$63,839	\$1,276,773	\$573,686	\$41,100	\$532,586	8.3	655,204
Gas Heating (HVAC/Process) Replacement		0	0.0	2,225	\$19,801	\$396,024	\$295,584	\$0	\$295,584	14.9	260,536
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,225	\$19,801	\$396,024	\$295,584	\$0	\$295,584	14.9	260,536
HVAC System Improvements		58,074	0.0	790	\$12,730	\$190,944	\$39,423	\$0	\$39,423	3.1	151,001
ECM 12	Implement Demand Control Ventilation (DCV)	58,074	0.0	790	\$12,730	\$190,944	\$39,423	\$0	\$39,423	3.1	151,001
Food Service & Refrigeration Measures		22,261	2.6	0	\$2,184	\$20,110	\$3,660	\$400	\$3,260	1.5	22,416
ECM 13	Refrigerator/Freezer Case Electrically Commutated Motors	9,366	1.2	0	\$919	\$13,784	\$1,820	\$0	\$1,820	2.0	9,432
ECM 14	Vending Machine Control	12,895	1.5	0	\$1,265	\$6,326	\$1,840	\$400	\$1,440	1.1	12,985
TOTALS		1,957,710	487.5	2,927	\$218,130	\$3,638,326	\$1,535,954	\$96,221	\$1,439,733	6.6	2,314,154

* - 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

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Gas Heating (HVAC/Process) Replacement		0	0.0	2,225	\$19,801	\$295,584	\$0	\$295,584	14.9	260,536
ECM 11	Install High Efficiency Steam Boilers	0	0.0	2,225	\$19,801	\$295,584	\$0	\$295,584	14.9	260,536
ECM 0	Install Infrared Heaters	0	0.0	0	\$0	\$0	\$0	\$0	0.0	0
HVAC System Improvements		58,074	0.0	790	\$12,730	\$39,423	\$0	\$39,423	3.1	151,001
ECM 12	Implement Demand Control Ventilation (DCV)	58,074	0.0	790	\$12,730	\$39,423	\$0	\$39,423	3.1	151,001
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ECM 14	Vending Machine Control	12,895	1.5	0	\$1,265	\$1,840	\$400	\$1,440	1.1	12,985
TOTALS		1,843,527	472.4	2,927	\$206,927	\$1,339,799	\$96,221	\$1,243,578	6.0	2,199,173

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Solar Energy Generation Potential

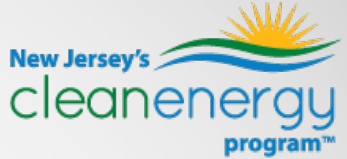


<i>Bayshore Community Hospital</i>	
<i>Potential:</i>	HIGH
<i>System Potential (kW):</i>	966
<i>Electric Generation: (kWh per year)</i>	1,150,863
<i>Displaced Cost: (per year)</i>	\$112,920

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>Bayshore Community Hospital</i>	
<i>Potential:</i>	HIGH
<i>System Potential (kW):</i>	580
<i>Electric Generation: (kWh per year)</i>	4,706,012
<i>Thermal Generation: (MBtu per year)</i>	21,103,650
<i>Displaced Cost: (per year)</i>	\$249,008

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

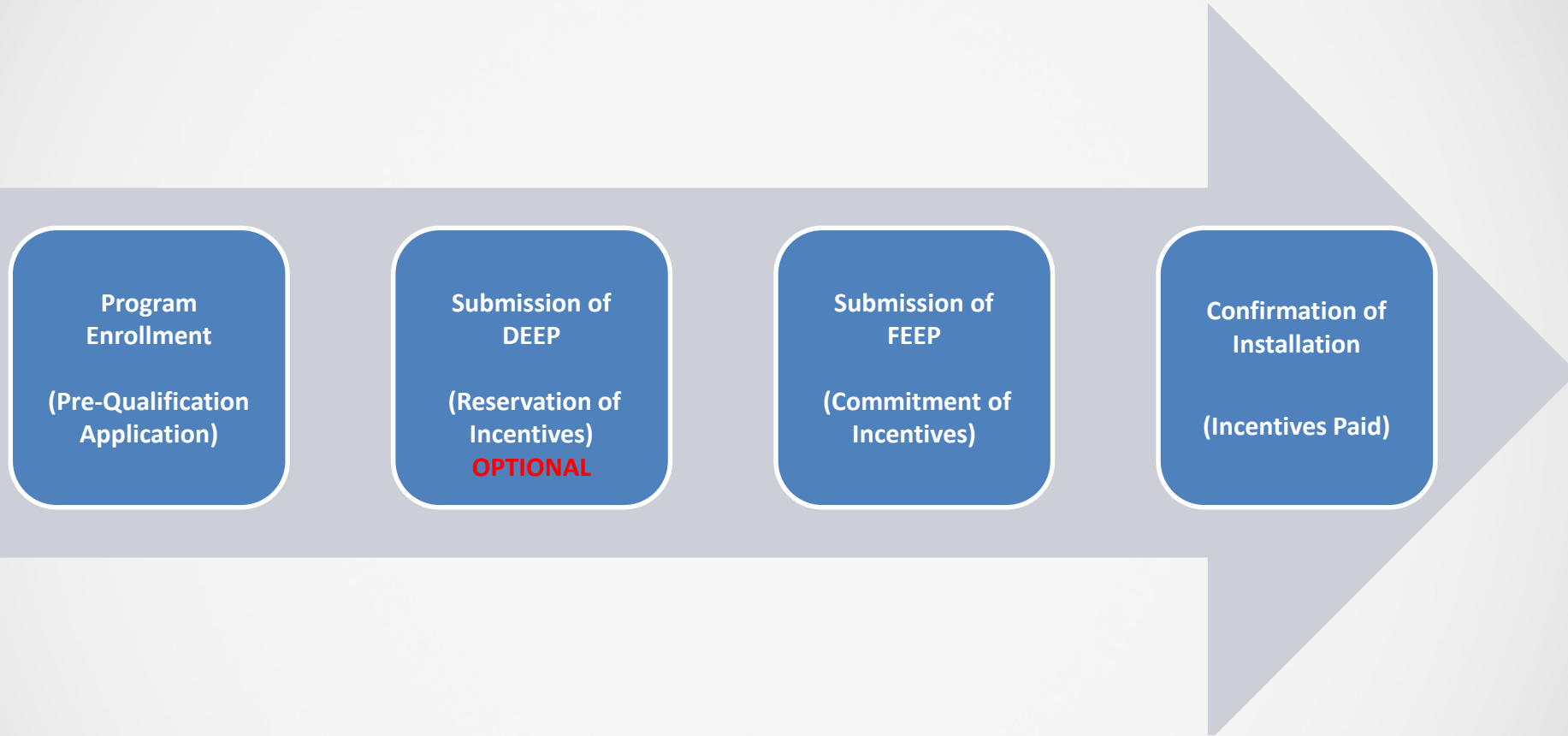
Large Energy Users: Overview



- 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

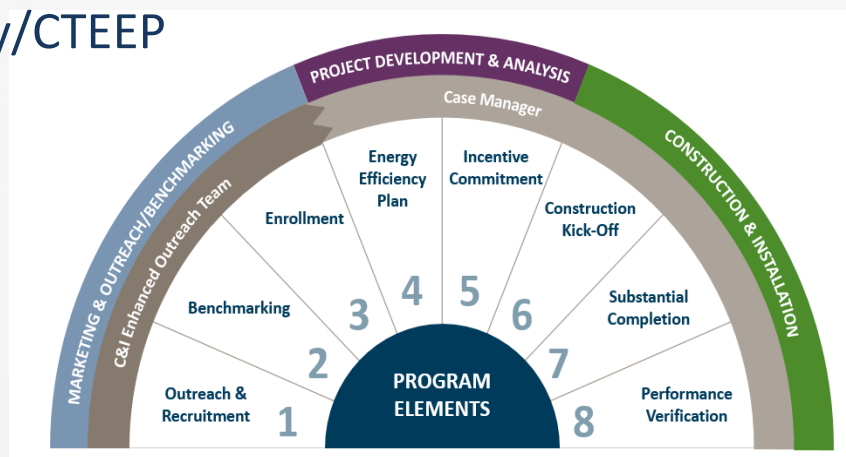
CTEEP: Overview



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 ⁴	<1 MW	\$1,000	30%	\$2 million
	> 1MW	\$500		\$3 million

*Waste 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



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FOR MORE INFORMATION

Visit NJCleanEnergy.com

Call (866) NJSMART

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Regional Outreach Manager

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