



LGEA Presentation

DHS – Joseph Kohn Training Center

September 25, 2023

New Jersey's Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

- State of New Jersey DHS
 - Christian Casteel
 - Ripenrai Nagar
 - Falguni Mittal
 - Leonard Cox
 - Michelle Whitmore
- NJ Clean Energy Program
 - Sarah Walters
 - Moussa Traore
 - Eduardo Garcia
- New Jersey's Cleanenergy program"

- New Jersey BPU
 - Sara Bluhm
 - Yuliia Herhel



Agenda

- The audit process overview
- Energy use & existing conditions
- Review of Energy Conservation Measures (ECMs) identified & other recommendations
- Energy Savings Improvement Program (ESIP)
- Energy Efficiency Incentive Programs
- Questions regarding the draft audit report
- Next steps for Joseph Kohn Training Center



LGEA PROCESS



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

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Overview of Systems, Baseline & Existing Conditions:

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

Professional Engineer or Registered Architect Stamp (if applicable) 7

SAVINGS POTENTIAL



All Opportunities



Lighting Upgrades

- Lighting Control Measures
- Variable Frequency Drive (VFD) Measures
- Domestic Water Heating Upgrade
- Food Service & Refrigeration Measures

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#	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 ₂ e Emissions Reduction (Ibs)
Lighting Upgrades			45,904	17.9	-9	\$7,310	\$22,226	\$3,149	\$19,077	2.6	45,115
ECM 1	Install LED Fixtures	Yes	495	0.0	0	\$80	\$471	\$50	\$421	5.3	498
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	40,134	16.6	-8	\$6,390	\$19,491	\$2,910	\$16,581	2.6	39,432
ECM 3	Retrofit Fixtures with LED Lamps	Yes	2,500	1.1	-1	\$398	\$1,396	\$189	\$1,207	3.0	2,458
ECM 4	Install LED Exit Signs	Yes	2,775	0.3	-1	\$442	\$869	\$0	\$869	2.0	2,727
Lighting Control Measures			6,725	2.8	-1	\$1,071	\$13,374	\$4,590	\$8,784	8.2	6,608
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	6,725	2.8	-1	\$1,071	\$13,374	\$4,590	\$8,784	8.2	6,608
Variable Frequency Drive (VFD) Measures			37,672	6.8	0	\$6,087	\$101,048	\$3,750	\$97,298	16.0	37,936
ECM 6	Install VFDs on Constant Volume (CV) Fans	No	8,700	2.1	0	\$1,406	\$76,032	\$1,250	\$74,782	53.2	8,761
ECM 7	Install VFDs on Chilled Water Pumps	Yes	20,132	3.6	0	\$3,253	\$11,724	\$2,000	\$9,724	3.0	20,273
ECM 8	Install VFDs on Heating Water Pumps	Yes	8,840	1.1	0	\$1,428	\$13,291	\$500	\$12,791	9.0	8,902
Domestic Water Heating Upgrade			0	0.0	24	\$275	\$312	\$107	\$204	0.7	2,844
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	24	\$275	\$312	\$107	\$204	0.7	2,844
Food Service & Refrigeration Measures			3,566	0.4	0	\$576	\$690	\$100	\$590	1.0	3,591
ECM 10 Vending Machine Control Yes		Yes	3,566	0.4	0	\$576	\$690	\$100	\$590	1.0	3,591
TOTALS (COST EFFECTIVE MEASURES)				25.8	13	\$13,914	\$61,617	\$10,446	\$51,171	3.7	87,332
TOTALS (ALL MEASURES)			93,868	28.0	13	\$15,320	\$137,650	\$11,696	\$125,954	8.2	96,093

* - All incentives presented in this table are included as placeholders for planning purposes 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



MEASURES FOR FUTURE CONSIDERATION

Installation of an Energy
 Management System





EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV



	JKTC
Potential:	Medium



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FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting = NJ ESIP Program
- A creative tool and financing mechanism that allows public 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
- 2 Options: Lease Purchase Loan or Bond
- 15 or 20 year pay back term
- NJBPU Approved Incentive Programs
 - Utility or NJCEP
- Can be combined with Federal/State Grants
- No upfront capital expenses
- No referendum or impact to tax payers



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP





ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP

FOR MORE INFORMATION

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C&I ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com



UTILITY RUN ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com/Transition

PRESCRIPTIVE & CUSTOM REBATES:

- Individual high efficiency equipment rebates for renovation, remodeling, and equipment replacement
- Flexibility to do a little or a lot
- No size requirement

DIRECT INSTALL:

- Turn-key retrofit program to replace outdated and inefficient equipment including, lighting, HVAC, refrigeration, etc.
- The facility must have an average electric peak demand <200kW in the previous year to qualify



- **ENGINEERED SOLUTIONS:**
- Comprehensive, whole-building approach to saving energy
 - The facility must have an average electric peak demand >200kW in the previous year to qualify

UTILITY RUN ENERGY EFFICIENCY PROGRAMS

PSE&G

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STATE FACILITIES INITIATIVE (SFI)

The State Facilities Initiative (SFI)

This program is for State-owned facilities.

The program identifies and implements Energy Efficiency projects in Stateowned facilities or State-sponsored projects with the objective of producing energy and cost savings. The funding provided to the SFI is directly in line with EMP Goals 3.3.5 and 4.1.1.

EMP Goal 3.3.5 seeks to "[i]mprove energy efficiency in, and retrofit state buildings to, a high performance standard."

EMP Goal 4.1.1 addresses electrifying State facilities.



LARGE ENERGY USERS

NJCleanEnergy.com/LEUP

- Large C&I entities who have paid a minimum of \$5,000,000 in the WHO previous 12 months of utility bills
- The average peak demand of all facilities submitted \geq 400kW SIZE TO and/or 4,000 DTh QUALIFY
- ABOUT • Encourages large C&I utility customers to self-invest in energy efficiency, combined heat & power, and fuel cell projects
 - Must have ability to "bank" funds for up to two fiscal years

INCENTIVE Maximum incentive per entity is the lesser of: CAP

- •\$4 million,
- •75% of total project cost, or
- 90% of NJCEP contribution or annual energy saving caps (\$0.33/kWh and \$3.75/therm)



LARGE ENERGY USERS

NJCleanEnergy.com/LEUP





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