

LGEA Presentation St. Jude R.C. Church

February 17, 2023

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future



INTRODUCTIONS

- *St. Jude R.C. Church*
 - Rob Bond – Finance Committee Member
 - Peter Wierzbicki – Pastor
 - Doc Gianni – Head Building & Grounds
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Moussa Traore – LGEA Lead Auditor
 - Thierry Nicolas – LGEA Project Auditor
 - Meredith Coley – LGEA Account Manager

AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified & other recommendations
- Energy Efficiency Incentive Programs
- Questions regarding the draft audit report
- Next steps for St. Jude R.C. Church

LGEA PROCESS

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



SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

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

Utility Consumption:

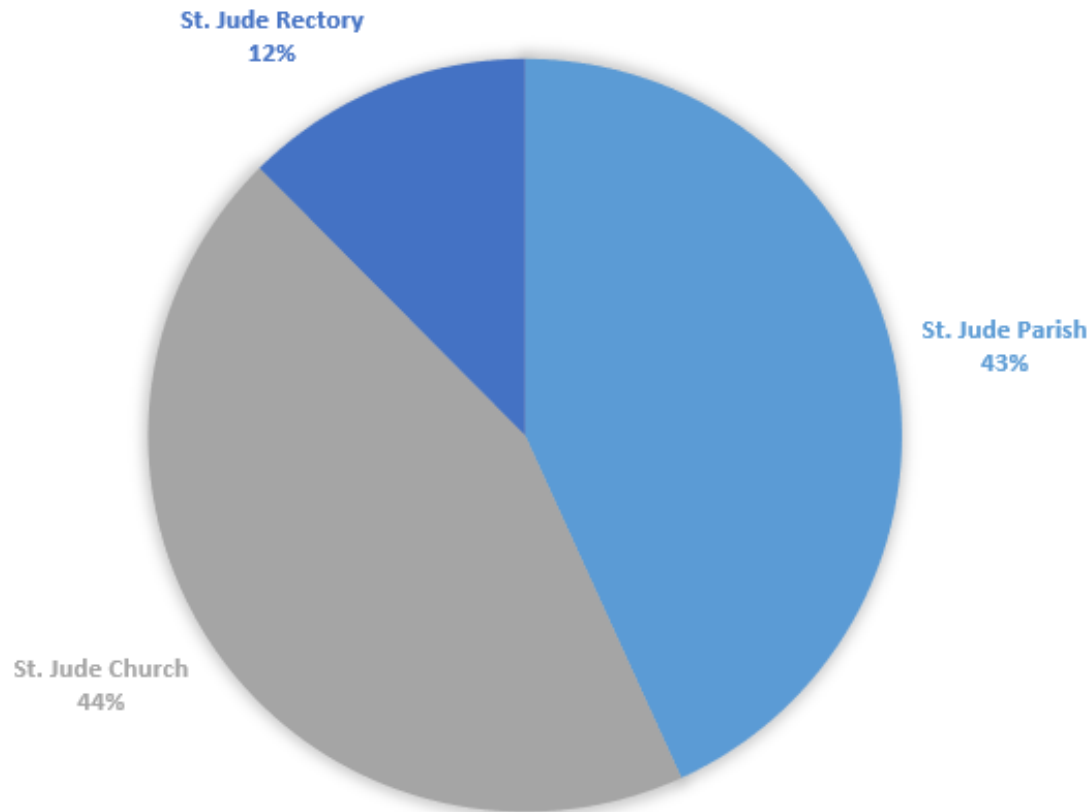
- Electric Consumption and Costs
- Fuel Oil Consumption and Costs
- Propane Consumption and Costs

Sites Visited/Analyzed

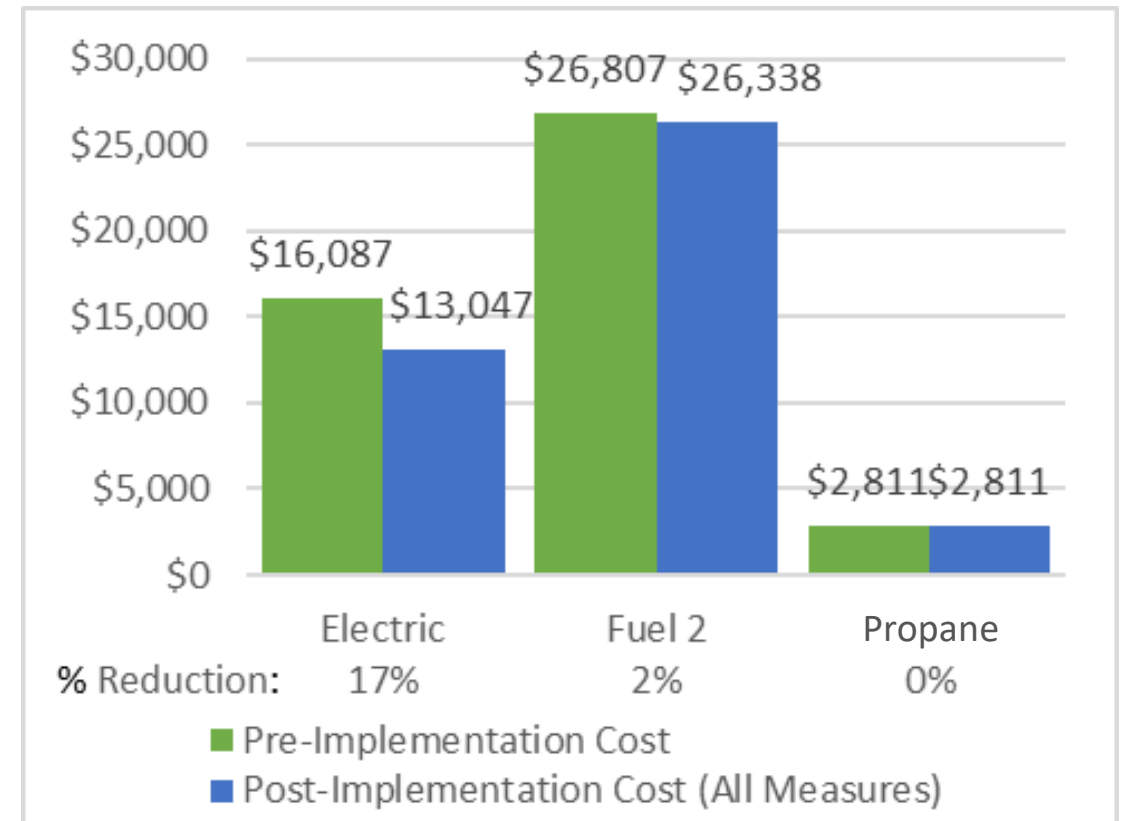
- Church
- Parish Hall
- Rectory

UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

**ENERGY STAR®** Statement of Energy Performance

31

ENERGY STAR®
Score¹

St. Jude Roman Catholic Church, Building A (Church)

Primary Property Type: Worship Facility
Gross Floor Area (ft²): 7,200
Built: 1958

For Year Ending: August 31, 2022
Date Generated: January 12, 2023

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
St. Jude Roman Catholic Church, Building A (Church) 40 Maxim Drive Hopatcong, New Jersey 07843	St. Jude Roman Catholic Church 40 Maxim Drive Hopatcong, NJ 07843 973-398-8377	Kamil Wierzbicki 40 Maxim Drive Hopatcong, NJ 07843 (973) 398-8377 frpeter@stjudehopatcong.org

Property ID: 23935465

Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison
88.3 kBtu/ft²	Fuel Oil (No. 2) (kBtu) 517,072 (81%) Electric - Grid (kBtu) 118,546 (19%)	National Median Site EUI (kBtu/ft²) 85.4 National Median Source EUI (kBtu/ft²) 87.9 % Diff from National Median Source EUI 35%
Source EUI 118.6 kBtu/ft²		Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 49

Site EUI
88.3 kBtu/ft²

Source EUI
118.6 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	85.4
National Median Source EUI (kBtu/ft²)	87.9
% Diff from National Median Source EUI	35%

Site Name	ENERGY STAR® Score
Church	31
Parish Hall	N/A
Rectory	N/A

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

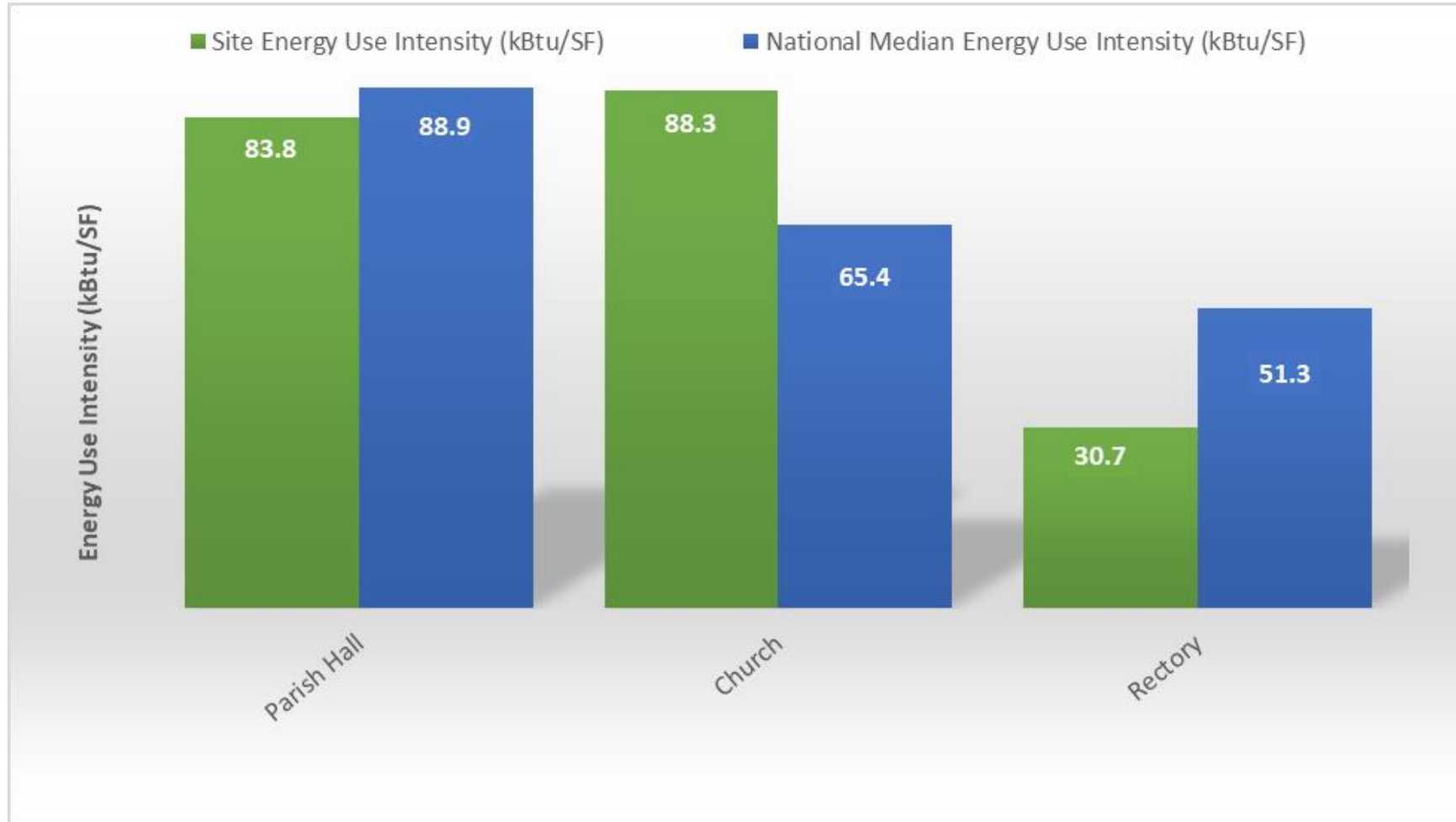
() - _____



Professional Engineer or Registered
Architect Stamp
(if applicable)

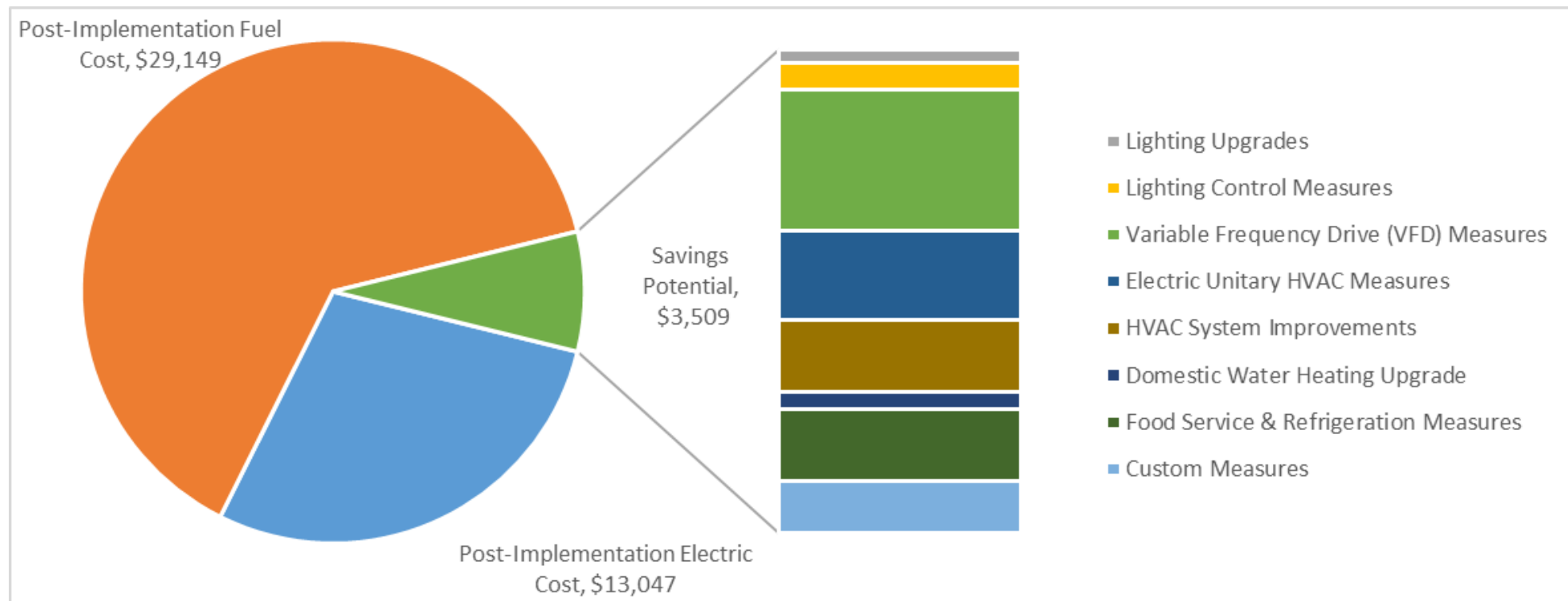
ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

BENCHMARKING



ALL OPPORTUNITIES

Savings Potential



ALL OPPORTUNITIES

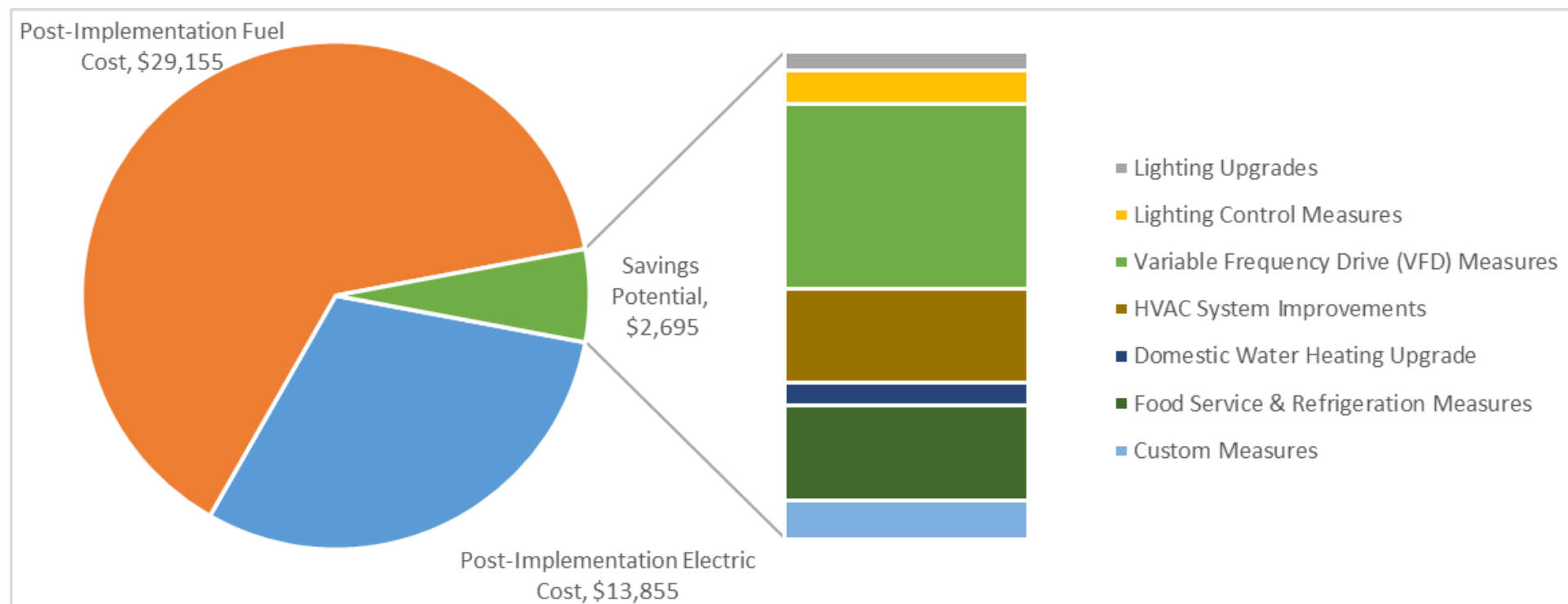
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		725	0.4	-0.1	\$102	\$244	\$2	\$242	2.4	718
ECM 1	Retrofit Fixtures with LED Lamps	725	0.4	-0.1	\$102	\$244	\$2	\$242	2.4	718
Lighting Control Measures		1,192	0.5	-0.4	\$191	\$2,231	\$210	\$2,021	10.6	1,134
ECM 2	Install Occupancy Sensor Lighting Controls	1,098	0.5	-0.4	\$178	\$2,006	\$210	\$1,796	10.1	1,039
ECM 3	Install High/Low Lighting Controls	94	0.0	0.0	\$13	\$225	\$0	\$225	17.7	95
Variable Frequency Drive (VFD) Measures		5,366	1.8	0.0	\$1,019	\$9,110	\$400	\$8,710	8.6	5,403
ECM 4	Install VFDs on Constant Volume (CV) Fans	5,366	1.8	0.0	\$1,019	\$9,110	\$400	\$8,710	8.6	5,403
Unitary HVAC Measures		3,429	3.4	0.0	\$651	\$31,788	\$1,580	\$30,208	46.4	3,453
ECM 5	Install High Efficiency Air Conditioning Units	3,429	3.4	0.0	\$651	\$31,788	\$1,580	\$30,208	46.4	3,453
HVAC System Improvements		472	0.0	16.6	\$517	\$720	\$108	\$612	1.2	3,193
ECM 6	Install Pipe Insulation	472	0.0	16.6	\$517	\$720	\$108	\$612	1.2	3,193
Domestic Water Heating Upgrade		778	0.0	0.0	\$131	\$50	\$11	\$39	0.3	784
ECM 7	Install Low-Flow DHW Devices	778	0.0	0.0	\$131	\$50	\$11	\$39	0.3	784
Food Service & Refrigeration Measures		3,026	0.3	0.0	\$520	\$1,900	\$0	\$1,900	3.7	3,047
ECM 8	Replace Refrigeration Equipment	3,026	0.3	0.0	\$520	\$1,900	\$0	\$1,900	3.7	3,047
Custom Measures		2,090	0.0	0.0	\$379	\$4,453	\$0	\$4,453	11.7	2,105
ECM 9	Replace Electric Water Heater with Heat Pump Water Heater	2,090	0.0	0.0	\$379	\$4,453	\$0	\$4,453	11.7	2,105
TOTALS		17,078	6.4	16.1	\$3,509	\$50,496	\$2,311	\$48,185	13.7	19,836

* - All incentives presented in this table are included as placeholders 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).

COST EFFECTIVE OPPORTUNITIES

Savings Potential



COST EFFECTIVE OPPORTUNITIES

#	Energy Conservation Measure	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 (lbs)
Lighting Upgrades		725	0.4	-0.1	\$102	\$244	\$2	\$242	2.4	718
ECM 1	Retrofit Fixtures with LED Lamps	725	0.4	-0.1	\$102	\$244	\$2	\$242	2.4	718
Lighting Control Measures		1,192	0.5	-0.4	\$191	\$2,231	\$210	\$2,021	10.6	1,134
ECM 2	Install Occupancy Sensor Lighting Controls	1,098	0.5	-0.4	\$178	\$2,006	\$210	\$1,796	10.1	1,039
ECM 3	Install High/Low Lighting Controls	94	0.0	0.0	\$13	\$225	\$0	\$225	17.7	95
Variable Frequency Drive (VFD) Measures		5,366	1.8	0.0	\$1,019	\$9,110	\$400	\$8,710	8.6	5,403
ECM 4	Install VFDs on Constant Volume (CV) Fans	5,366	1.8	0.0	\$1,019	\$9,110	\$400	\$8,710	8.6	5,403
HVAC System Improvements		472	0.0	16.6	\$517	\$720	\$108	\$612	1.2	3,193
ECM 6	Install Pipe Insulation	472	0.0	16.6	\$517	\$720	\$108	\$612	1.2	3,193
Domestic Water Heating Upgrade		778	0.0	0.0	\$131	\$50	\$11	\$39	0.3	784
ECM 7	Install Low-Flow DHW Devices	778	0.0	0.0	\$131	\$50	\$11	\$39	0.3	784
Food Service & Refrigeration Measures		3,026	0.3	0.0	\$520	\$1,900	\$0	\$1,900	3.7	3,047
ECM 8	Replace Refrigeration Equipment	3,026	0.3	0.0	\$520	\$1,900	\$0	\$1,900	3.7	3,047
Custom Measures		1,140	0.0	0.0	\$216	\$2,070	\$0	\$2,070	9.6	1,148
ECM 9	Replace Electric Water Heater with Heat Pump Water Heater	1,140	0.0	0.0	\$216	\$2,070	\$0	\$2,070	9.6	1,148
TOTALS		12,699	3.0	16.1	\$2,695	\$16,325	\$731	\$15,594	5.8	15,427

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CHURCH

#	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 (lbs)
Lighting Control Measures			315	0.1	0	\$56	\$270	\$35	\$235	4.2	295
ECM 1	Install Occupancy Sensor Lighting Controls	Yes	315	0.1	0	\$56	\$270	\$35	\$235	4.2	295
Variable Frequency Drive (VFD) Measures			5,366	1.8	0	\$1,019	\$9,110	\$400	\$8,710	8.6	5,403
ECM 2	Install VFDs on Constant Volume (CV) Fans	Yes	5,366	1.8	0	\$1,019	\$9,110	\$400	\$8,710	8.6	5,403
Unitary HVAC Measures			3,429	3.4	0	\$651	\$31,788	\$1,580	\$30,208	46.4	3,453
ECM 3	Install High Efficiency Air Conditioning Units	No	3,429	3.4	0	\$651	\$31,788	\$1,580	\$30,208	46.4	3,453
HVAC System Improvements			190	0.0	17	\$473	\$565	\$88	\$477	1.0	2,909
ECM 4	Install Pipe Insulation	Yes	190	0.0	17	\$473	\$565	\$88	\$477	1.0	2,909
Domestic Water Heating Upgrade			278	0.0	0	\$53	\$7	\$4	\$4	0.1	280
ECM 5	Install Low-Flow DHW Devices	Yes	278	0.0	0	\$53	\$7	\$4	\$4	0.1	280
Custom Measures			1,140	0.0	0	\$216	\$2,070	\$0	\$2,070	9.6	1,148
ECM 6	Replace Electric Water Heater with Heat Pump Water Heater	Yes	1,140	0.0	0	\$216	\$2,070	\$0	\$2,070	9.6	1,148
TOTALS (COST EFFECTIVE MEASURES)			7,289	1.9	16	\$1,817	\$12,022	\$527	\$11,495	6.3	10,035
TOTALS (ALL MEASURES)			10,717	5.3	16	\$2,468	\$43,810	\$2,107	\$41,703	16.9	13,487

* - 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).

PARISH HALL

#	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 (lbs)
Lighting Upgrades			673	0.4	0	\$108	\$140	\$5	\$135	1.2	631
ECM 1	Retrofit Fixtures with LED Lamps	Yes	673	0.4	0	\$108	\$140	\$5	\$135	1.2	631
Lighting Control Measures			638	0.4	0	\$102	\$540	\$70	\$470	4.6	598
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	638	0.4	0	\$102	\$540	\$70	\$470	4.6	598
HVAC System Improvements			158	0.0	0	\$27	\$119	\$20	\$99	3.6	159
ECM 3	Install Pipe Insulation	Yes	158	0.0	0	\$27	\$119	\$20	\$99	3.6	159
Domestic Water Heating Upgrade			278	0.0	0	\$48	\$14	\$7	\$7	0.1	280
ECM 4	Install Low-Flow DHW Devices	Yes	278	0.0	0	\$48	\$14	\$7	\$7	0.1	280
Food Service & Refrigeration Measures			3,026	0.3	0	\$520	\$1,900	\$0	\$1,900	3.7	3,047
ECM 5	Replace Refrigeration Equipment	Yes	3,026	0.3	0	\$520	\$1,900	\$0	\$1,900	3.7	3,047
Custom Measures			950	0.0	0	\$163	\$2,383	\$0	\$2,383	14.6	957
ECM 6	Replace Electric Water Heater with Heat Pump Water Heater	No	950	0.0	0	\$163	\$2,383	\$0	\$2,383	14.6	957
TOTALS (COST EFFECTIVE MEASURES)			4,773	1.1	-1	\$806	\$2,714	\$102	\$2,611	3.2	4,715
TOTALS (ALL MEASURES)			5,723	1.1	-1	\$969	\$5,097	\$102	\$4,995	5.2	5,671

* - 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).

RECTORY

#	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 (lbs)
Lighting Upgrades			552	0.3	0	\$74	\$210	\$0	\$210	2.8	555
ECM 1	Retrofit Fixtures with LED Lamps	Yes	552	0.3	0	\$74	\$210	\$0	\$210	2.8	555
Lighting Control Measures			240	0.1	0	\$32	\$611	\$0	\$611	19.0	241
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	145	0.0	0	\$20	\$386	\$0	\$386	19.8	146
ECM 3	Install High/Low Lighting Controls	Yes	94	0.0	0	\$13	\$225	\$0	\$225	17.7	95
HVAC System Improvements			124	0.0	0	\$17	\$36	\$0	\$36	2.1	125
ECM 4	Install Pipe Insulation	Yes	124	0.0	0	\$17	\$36	\$0	\$36	2.1	125
Domestic Water Heating Upgrade			222	0.0	0	\$30	\$29	\$0	\$29	1.0	224
ECM 5	Install Low-Flow DHW Devices	Yes	222	0.0	0	\$30	\$29	\$0	\$29	1.0	224
TOTALS (COST EFFECTIVE MEASURES)			1,138	0.3	0	\$153	\$885	\$0	\$885	5.8	1,146
TOTALS (ALL MEASURES)			1,138	0.3	0	\$153	\$885	\$0	\$885	5.8	1,146

* - 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

- Building Envelope
- Window Replacements
- Attic Insulation
- Upgrade to Heat Pump System

EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV

Know your EV Charging Stations



LEVEL 1



4-6 miles/hour
Replenish Rate



7-30 hours for
full charge

Approximate time to
charge a battery*

CHARGE
110/120V

LEVEL 2



10-20 miles/hour
Replenish Rate



2-10 hours for
full charge

Approximate time to
charge a battery*

CHARGE
208/240V

DIRECT CURRENT (DC) FAST CHARGING*



120-200 miles/hour
Replenish Rate



20-90 minutes for
full charge

Approximate time to
charge a battery*

CHARGE
480V or 208V

*dependent on the size of the battery

	Church	Parish
Potential:	Medium	Medium



C&I ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com

LOCAL
GOVERNMENT
CUSTOMERS

COMMERCIAL &
INSTITUTIONAL
CUSTOMERS

LARGE
ENERGY
CUSTOMERS

EXISTING BUILDINGS

MEASUREMENT & AUDITS

FREE Energy Audits



RETROFITS

Prescriptive &
Custom Rebates

Direct Install

Engineered Solutions

And more from
your local utility!



Incentives up
to \$4 million
for eligible projects



NEW CONSTRUCTION

Prescriptive & Custom
Rebates for New
Construction and
Gut Rehabs

Pay for Performance
incentives for
buildings over
50,000 sq. ft.



DISTRIBUTED ENERGY RESOURCES

Combined Heat & Power
and Fuel Cell Installation
Incentives

Microgrid Development

Battery Storage

Muni EV Fleets



Key:

Programs run by investor-owned utility companies



Programs run by NJCEP



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

JCP&L

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FOR MORE INFORMATION

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THANK YOU

