



# DEMEC

Delaware Municipal Electric Corporation

## **LED Streetlight Program Verified Savings Report**

**EMV Subcommittee**

September 12, 2017



# DEMEC Overview

- DEMEC is a Joint Action Wholesale Electric Utility incorporated in 1979.
- DEMEC member/owners are all of the nine municipal distribution utilities in the state of Delaware.
- DEMEC's power supply value comes from a portfolio of existing self-supply generation assets, staggered short, medium, and long term power contracts, and spot market purchases. This optimized portfolio provides low-cost wholesale power supply to our members.

## DEMEC MEMBER COMMUNITIES

<b>Newark</b>	<b>New Castle</b>	<b>Middletown</b>	<b>Clayton</b>	<b>Smyrna</b>
	<b>Dover</b>	<b>Milford</b>	<b>Lewes</b>	<b>Seaford</b>



# LED Streetlight Retrofit Program



LED Streetlight Retrofits has been identified as an improvement effort to save all municipal electric customers money. DEMEC cities and towns are working together on a large scale LED streetlight retrofit program. On behalf of all its member communities, DEMEC developed product specifications and issued a request for proposals ("RFP") in 2015 from vendors that could furnish LED lighting fixtures.

The program is designed to:

- ◆ Allow any or all communities to participate
- ◆ Permit all cities and towns to benefit from the savings of a scaled purchase
- ◆ Maintain pricing regardless of purchase quantity
- ◆ In other words, DEMEC members receive very attractive pricing with a la carte menu options





# Community Installations

Total Fixture Quantities Installed by Community					
CITY	100 watt equivalent LED	150 watt equivalent LED	250 watt equivalent LED	400 watt equivalent LED	Total
Lewes	25	75			100
Newark		802	862	239	1,903
Seaford		283			283
Smyrna				133	133
Dover			18	20	38
<b>Total</b>	25	1,160	880	392	2,457

# Program Verified Results



Total Project Impact	
<b>Total Annual Energy Savings (kWh)</b>	1,093,329
<b>Total Lifetime Energy Savings (kWh)</b>	19,679,913
<b>Annual Avoided Energy Costs</b>	\$75,013
<b>Lifetime Operations &amp; Maintenance (O&amp;M) Savings</b>	\$1,785,156
<b>Total Project Cost</b>	\$818,418
<b>Total Project Lifetime Benefit</b>	\$3,135,395
<b>Total Resource Benefit (TRB)</b>	\$1,237,032
<b>Net Present Value (NPV)</b>	\$1,835,894
<b>Simple Payback (SPB) without O&amp;M</b>	10.9 years
<b>Simple Payback (SPB) with O&amp;M</b>	4.7 years
<b>Benefit to Cost Ratio (BCR)</b>	3.8:1

DEMEC's third party evaluator, Vermont Energy Investment Corporation ("VEIC"), used an evaluation methodology that follows the International Performance Measurement and Verification Protocol (IPMVP®). It defines standard terms and suggests best practices for quantifying the results of energy efficiency investments.

# Environmental Savings



Annual CO2 savings: 768 metric tons.

## Equivalents:

- 162 passenger vehicles driven for one year, or
- 1,841,507 miles driven, or
- 34 garbage trucks of waste, or
- 244 tons recycled instead of landfilled

Calculated using the EPA greenhouse gas equivalencies calculator that supports the conversion of greenhouse gas emissions numbers into different types of units: <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>



# Energy Efficiency Target Results

<b>2016 retail sales (kwhs)</b>	<b>1,588,244,599</b>
<b>2016 LED Program Annual Savings (kwhs)</b>	<b>1,093,329</b>
<b>2016 Savings Percentage of Retail Sales</b>	<b>0.07%</b>

# Lessons Learned

- VEIC strongly recommends that municipalities monitor or meter site specific LED operating hours so actual (known) hours of operation be used instead of deemed value as provided by the TRM
- VEIC recommends that DEMEC provide its member communities with standardized project implementation forms





**Thank You**