

Chapter 2: Utility LED Options



Figure 1- An HPS fixture doubling as a home for a nest on Main Street in the town of Rosendale

In 2017, for the first time, utility LED upgrades became an option for every local government in the Mid-Hudson region. In that year, the Public Service Commission approved NYSEG’s first LED offerings, and also approved expanded LED offerings by O&R and Central Hudson.¹ This chapter

¹ NYS Public Service Commission, *Order Approving Tariff Amendments with Modifications*, In the Matter of the Tariff Filing by Orange and Rockland Utilities, Inc., to Update Service Classification No. 4 – Public Street Lighting –Company Owned – to Incorporate LED Options Contain in P.S.C. No. 3 – Electricity (Case 16-E-0226), Effective March 10, 2017; NYS Public Service Commission, *Order Approving Tariff Amendments with Modifications*, In the Matter of the Tariff Filing by Central Hudson Gas & Electric Corporation to Establish New LED Lighting Options under Service Classification No. 5 – Area Lighting Service and Modify Service Classification No. 8 – Public Street and Highway Lighting, P.S.C. No 15 – Electricity, Effective March 10, 2017; NYS Public Service Commission, *Order Approving Tariff Amendments with Modification*, In the Matter of Tariff Filing by New York State Electric and Gas Corporation to Revise Its Electric Tariff Schedule, P.S.C. No. 121 to Offer Company-Owned LED Street Lighting

describes each utility's LED program, assesses the energy savings potential, and outlines the respective responsibilities of the utility and the local government in the LED conversion process. Utility-specific subsections of this chapter cover the LED options offered, fixture rates and savings, upfront costs of conversion, and any limitations imposed by the utility on the number of lights they will convert each year.

Historically, local governments have had little involvement in street lighting beyond paying their bills. This is no longer the case. When converting to utility-owned LEDs, governments are expected to play a lead role in decision-making. The PSC has required that utilities consult with municipalities on LED replacements—the utility will not (or should not) decide which of its LED options are to be installed at a particular location. It is the government's responsibility to undertake an assessment of existing lighting conditions and needs within the community, and to develop a lighting plan based on available utility LED options. Municipal lighting assessments, which inform the replacement plan, help maximize energy savings and ensure that the upgrades provide uniform lighting and are not excessively bright for their location. (See Chapter 3 and 6 for further discussion of lighting assessments.) As will be discussed further below, local governments will need to coordinate with the utility to agree on a conversion plan and timeframe, and to obtain information about utility LED fixtures and their specifications.

Utilities in the Mid-Hudson region each offer at least four LED wattage options as replacements for the various light types and sizes that are currently installed. This chapter examines the degree to which the utility's wattage options fall within optimal ranges of energy savings, given the state of LED technology today. The average energy savings for replacing a high-pressure sodium (HPS) and mercury vapor (MV) street light should be about 65 percent and percent, respectively, assuming an LED fixture efficacy (lumens per watt) of at least 100 lumens per watt.² For HPS fixtures of 400 watts or greater, and for MV fixtures above 400 watts, the average efficiency improvements are higher because the optimal LED wattage range is the same as for the 400-watt HPS, assuming the standard mounting height of 25 to 30 feet above the roadway.³ LED lights above 140 watts are typically unnecessary, given the efficiency and intensity of this lighting technology.

Local governments may be surprised to learn that the monthly fixture charges for utility LED options are in almost every case lower than the charges for existing lights. LED fixture prices have dropped dramatically in recent years, which partly explains the lower fixture charge. However, the main reasons are the long life of LEDs and significantly reduced operation and maintenance costs compared to existing fixtures. On-going utility costs of maintaining LEDs, which are built into monthly fixture charges, are significantly less than for traditional street lighting. The utility-specific sections

Options for Customers Service Under Service Classification No. 3, Issued and Effective November 16, 2017.

³ Where lights are more than 35 feet above the roadway some increase in output will be required.

Anatomy of a Bill for Utility-Owned Street Lights

Fixture Charges: The ‘rent’ charged for lights. Rates are set in the tariff according to the type and wattage of the fixture, and are based on utility-estimated costs of the fixture, maintenance, depreciation, taxes, various “system” costs, as well as the utility’s allowed profit.

Energy Supply Charges: Per kWh charges at market price for supply. In New York, supply can be purchased from the utility or from a retail energy supply company.

Volumetric Charges: Per kWh charges that include the System Benefits Charge, NYS Assessment, and other charges (including a portion of the electricity delivery costs).

NYS & Local Taxes and Surcharges.

Figure 2 - Anatomy of a bill for utility-owned lights

of this chapter show the combined savings from lower rates and reduced energy use for each utility’s LED options.

While the rates for LEDs are lower, the conversion has an upfront cost: The PSC has required that municipalities pay the utility for the remaining book value of lights being replaced. When utilities develop street light rates, they assume amortization of the cost of the lights over a certain number of years. If a street light is taken out of service before the end of its useful life, and before the light has been fully depreciated, then the cost of the street light has not been fully recovered through the rates, leaving the utility with “stranded costs” on its books. Unless these costs are recovered from the municipal street light customer, then they are borne by all ratepayers—a burden-shifting practice that the PSC generally frowns upon.

Like many other utility costs, a company’s valuation of its street lights is subject to its own particular accounting practices. As a result, two fixtures that are the same type and age may have different values in different utility territories. The utility-specific sections that follow show widely varying stranded costs from one utility service territory to the next.

The next sections examine in greater detail the LED street light programs of the three Mid-Hudson utilities: O&R, Central Hudson, and NYSEG.