State of New Jersey
DIVISION OF RATE COUNSEL
140 EAST FRONT STREET, 4TH FL
P.O. BOX 003
TRENTON, NEW JERSEY 08625

PHIL MURPHY
Governor

SHEILA OLIVER
Lt. Governor

STEFANIE A. BRAND
Director

February 21, 2020

Via Hand Delivery and Electronic Mail
Honorable Aida Camacho-Welch, Secretary
Board of Public Utilities
44 South Clinton Ave., 9th Floor
Post Office Box 350
Trenton, New Jersey 08625-0350

Re: Stakeholder Comments on LED Streetlight Conversion and Tariffs
BPU Docket No. EO20010086

Dear Secretary Camacho-Welch:

Enclosed for filing please find an original and ten (10) copies of the Division of Rate Counsel's stakeholder comments on the LED Streetlight Conversions and Tariffs. These comments are being submitted pursuant to the Board of Public Utilities Stakeholder Notice dated January 14, 2020. Pursuant to the said notice, an electronic copy of these comments has been electronically mailed to Board.Secretary@bpu.nj.gov.

We have also enclosed one additional copy of the materials transmitted. **Please stamp and date the copy as "filed" and return to our courier.**

Thank you for your consideration and attention to this matter.

Respectfully submitted,

STEFANIE A. BRAND
DIRECTOR, DIVISION OF RATE COUNSEL

By: Maura Caroselli
Maura Caroselli, Esq.
Assistant Deputy Rate Counsel

MC/dl
Enclosure

c: Board.Secretary@bpu.nj.gov
Paul E. Flanagan, Executive Director, BPU
Grace Power, Chief of Staff, BPU
Abe Silverman, Esq., BPU
Sara Bluhm, BPU
Ken Sheehan, BPU
Pamela Owen, DAG

New Jersey Energy Efficiency Transition
Stakeholder Process

LED Streetlight Conversion and Tariffs

BPU Docket No.: EO20010086

Comments of the Division of Rate Counsel

February 21, 2020

Introduction

In general, Rate Counsel supports conversion of street lights to LED technology as an attractive opportunity to significantly reduce energy usage, reduce operating costs, reduce maintenance costs, improve public safety and comfort, and support future infrastructure all at the same time and with the same investment. According to the American Council for an Energy Efficient Economy ("ACEEE"), "Street lighting is often the first or second largest local government energy use, typically accounting for 25–50% of a municipal energy bill."[1] ACEEE also notes that "[c]onverting all street and highway lights in the United States to LEDs could save 20,200 GWh annually, equivalent to 0.5% of all electricity consumed in the country…DOE estimates that expanded adoption of high-efficiency street lighting could save communities across the country $1 billion a year."[2] In an effort to achieve LED conversion in a prudent manner, Rate Counsel provides some general comments and also more detailed policy considerations below.

Cost For Replacement

Rate Counsel maintains that attention must be paid to basic cost causation rate design principles of ratemaking and fairness in allocating costs. In particular, Rate Counsel supports ensuring that the municipalities who benefit from streetlight conversions bear responsibility for any "stranded" undepreciated cost of existing streetlights. Rate Counsel also supports tariffs that

[1] ACEEE Toolkit, "Reducing Energy Use in Public Outdoor Lighting", February 2020. Available at http://www.aceee.org/toolkit/2020/02/reducing-energy-use-public-outdoor-lighting.
[2] Ibid.

ensure that municipal customers recover the value of avoided energy and maintenance costs deriving from the conversion to LED technology at their expense. We have also provided examples and resources in other jurisdictions that we believe can be helpful in guiding this process.

Ownership of Poles and Streetlights

Rate Counsel believes that certain information must be provided to stakeholders in this process in order to enable informed decisions by each municipality as to whether and how to convert its street lights to LEDs. Specifically, if a municipality is considering an LED conversion, the utility should provide the municipality with a complete inventory of the street lighting infrastructure within that municipality. That information should include the owner of each pole and light fixture, the types of poles and fixtures, the age of each and their remaining useful lives, their original cost, their accumulated depreciation and their current book value. The utility and any other entities with ownership should provide the municipality with a complete itemized cost estimate to purchase the street lighting infrastructure within that municipality, so the municipality may arrange its own conversion to LEDs, and a complete itemized cost estimate for the utility to retain ownership of the street lighting infrastructure and to do the LED conversion. The cost estimate also should specify the cost of any advanced control technology the municipality is considering, as well as the cost of disposal or salvage value of the existing infrastructure.

The Board of Public Utilities should ensure that the interested parties have sufficient, credible data in order to make rational decisions. This information would be a minimum requirement for any municipality that would like to evaluate its options for municipal lighting going forward. In addition, the Board should address any barriers that may exist for the municipalities to own the streetlights.

Technology Options

Streetlight conversions can often be accompanied by additional technology deployments, such as traffic, parking, and safety monitors; weather monitoring; motion sensors and safety cameras; gunshot detection; and support for technology such as advanced wireless and the so-

called Internet of Things ("IoT").[3] These technologies are available on the competitive market and need not be provided by the public utility. New Jersey municipalities that wish to take advantage of these additional opportunities will need to ensure that their streetlight poles are adequate in both design and condition to accommodate these additional uses. If additional costs are imposed by the need to upgrade or replace utility poles or other infrastructure to support these non-electricity-related services, these costs should not be funded through individual electric ratepayers' utility rates.

Summary of LED Streetlight Conversion Policy Recommendations:

Rate Counsel recommends the following policy considerations to the Board:

1. **Cost Allocation.** According to ACEEE, LED lamps typically cost 2-4 times the cost of high pressure sodium ("HPS") technology, but produce enough energy and maintenance costs savings over time to more than justify the cost.[4] Cost allocation for such replacements should ensure that the municipality that benefits from upgraded LED lights, and who stands to realize the cost savings, pays for the full costs of conversion. This includes any undepreciated costs of existing equipment. Such costs should not be socialized to other ratepayers.

2. **Ownership and Maintenance.** Rate Counsel believes that municipalities should have the option of purchasing, condemning, or leasing streetlights within their jurisdictions. If they purchase or condemn the lights, the municipalities should bear a cost no greater than the well-documented net book value of the existing infrastructure, plus a reasonable administrative fee.[5] The Board can have a role in ensuring that the costs charged to the municipal customers are just and reasonable. One way to do this is to require each utility to include in its tariffs the factors it will consider in determining the sale price. The utility should provide the municipality with an itemized list of the costs associated with each option, both with and without purchasing the fixtures. The itemized costs should include among other factors the book value, original cost and depreciation, and how each

[3] See, for example, https://spectrum.ieee.org/computing/it/san-diego-installs-smart-streetlights-to-monitor-the-metropolis.
[4] ACEEE Toolkit.
[5] See the example from Albany, New York, cited below.

cost was developed. Further, municipalities should have the option of paying the maintenance costs to their utility as part of the tariff rate, soliciting competitive bids for the maintenance of those lights, or performing maintenance themselves with municipal resources. This will help to ensure that the savings associated with reduced maintenance costs accrue to the customers.

3. **Financing the Conversion.** Whether the municipalities purchase the lighting infrastructure or not, it should be possible to finance the conversion in such a way that municipal customers bear no up-front cost, and the payments over time are more than offset by the energy cost savings.

4. **Incentives.** In cases where EDCs retain ownership of the lights, the EDCs should be awarded their standard rate of return for infrastructure investments for conversion of standard streetlights to LEDs. No additional utility incentives would be required or appropriate. Incentives for municipal customers should be limited to zero-upfront-cost and possibly zero-interest financing options.

5. **Tariff and Billing Determinants.** In New Jersey and elsewhere, streetlights have generally not been metered. For example, under PSE&G's tariff BPL, customers are billed a monthly charge per unit based on the type of unit (which includes both capital recovery and maintenance charges), and a "variable" charge component that includes the cost of energy and various regulatory charges. The variable charge is multiplied by a presumed number of illumination hours for each month, with a set allowance for lamp outages. This tariff structure can be used if poles and fixtures are owned by the utility.

6. **Pace for Replacement.** The Board's policies should recognize that municipalities need not convert all existing streetlights to LED technology at once. Some jurisdictions have encouraged gradual transition to LEDs by phasing out all use of the least efficient technologies in current use when they are fully depreciated and inventories are exhausted, or when the current technology requires replacement for other reasons. In other cases, utilities have adopted conversion rate parameters as part of their tariff; for example, Central Hudson Gas and Electric in New York has a minimum conversion rate of 15%

and a maximum of 25% for municipalities in its service territory.[6] Further, as the cost of LED sources continues to decline, it may be appropriate to design a variable LED cost into the tariff that can be adjusted downward every few years to reflect then-current market conditions.

Relevant Examples of LED Streetlight Conversions in Other Jurisdictions

Rate Counsel has identified the following examples of municipal streetlight conversions in other states that may be instructive to the Board.

1. **City of Albany.** The City of Albany purchased approximately 10,339 luminaires and associated facilities from its utility, National Grid, in a transaction approved by the New York Public Service Commission[7] ("NY PSC") on April 19, 2019. This transaction was approved by the NY PSC, which has established a process for municipalities to convert the utility-owned street lights within their boundaries to LEDs.[8]

The two principles guiding that NY PSC process were:

a. The municipality may either purchase the street lighting fixtures and handle its own conversion to LEDs, or allow the public utility to convert the fixtures to LEDs and retain ownership of them.

b. With either arrangement, the municipality is responsible to pay the utility for all costs of the fixtures, including the stranded costs, whether purchased by the municipality or replaced by the utility.

The NY PSC requires each utility to provide the municipality interested in LEDs with an itemized list of the costs associated with converting to LED fixtures, both with and without purchasing the fixtures. Those itemized costs are to include among other factors the book value,

[6] Metzger *et al.*, "LED Street Light Conversions in New York: A Common Sense Guide for Local Governments in the Mid-Hudson Region." Available at http://courtneystrong.com/2017/10/common-sense-guide-local-governments-mid-hudson-region/.
[7] New York PSC Case No. 18-E-0707.
[8] NY PSC Case Nos. 15-E-0745, 0746, 0747, 0748 & 0749, Order Approving Tariff Amendments with Modifications, Oct. 14, 2016, involving respectively Central Hudson Gas & Electric Corp., NY State Gas & Electric Corp., Niagara Mohawk Power Corp. d/b/a National Grid, Rochester Gas & Electric Corp. and O&R Utilities, Inc.

original cost and depreciation, and how each cost was developed. The utility also must provide information to the municipality on any available utility energy efficiency incentives for LED conversions, concurrent with their sale pricing proposal.

The City of Albany's purchase price was set at the net book value of the facilities of $9,180,625, plus transaction and transition costs of approximately $270,049. The city's intention was to convert all of the luminaries to LED technology, for which it received Commission approval, also on April 19, 2019.[9]

The LED conversion project, to cost approximately $20 million, will initially be funded by the New York Power Authority, to be repaid out of the $3.3 million in annual energy and maintenance cost savings expected by the city.

In addition to the City of Albany, the NY PSC applied the principles above to approve the purchase of municipal street lights for LED conversion by the Cities of Cortland[10] and Canandaigua,[11] the Village of Newark,[12] the Town of Red Hook,[13] Town of Skaneateles,[14] and Town of Rosendale.[15]

2. **Mid-Hudson Region Utilities.** A thorough discussion of issues around conversion of municipal streetlights in the Mid-Hudson region of New York may be found in a report to the Mid-Hudson Street Light Consortium at http://courtneystrong.com/2017/10/common-sense-guide-local-governments-mid-hudson-region/. Several communities in this region have implemented LED conversions without assuming ownership of the lamps; however, unless the lamps were in need of replacement in any case, they have been required to pay the stranded cost of the existing infrastructure as part of the conversion cost. Local governments have been permitted to pay off this cost through their bill savings from reduced energy use over a maximum period of five years; however, full repayment has generally been achieved in three years.

[9] https://www.nypa.gov/news/press-releases/2019/20190418-smart-street-lighting-ny.
[10] New York PSC Case No. 18-E-0783.
[11] New York PSC Case No. 18-E-0668.
[12] New York PSC Case No. 18-E-0737.
[13] NY PSC Case No. 18-E-0326.
[14] NY PSC Case No. 19-E-0043.
[15] NY PSC Case No. 19-E-0064.

Additional examples, and a thorough discussion of issues faced by municipalities considering conversion, may be found in the ACEEE Toolkit referenced earlier.

Of particular note, in none of the examples cited above have conversion costs or stranded costs been socialized to ratepayers as a whole, and this should be the policy governing the costs of LED conversions in New Jersey as well. Further, in those jurisdictions, utilities have not been given incentives beyond the recovery of costs for the conversion of streetlights to LED technology. In New Jersey, funding could come from the issuance of municipal bonds, or some other non-utility source. As in the examples cited above, the funds could be repaid from energy cost savings over a period of three to six years, after which the municipalities would reap the entire ongoing benefit of reduced energy and operating costs for LED streetlights.