



The new math for LED retrofits: Rebates are lower and are expected drop more - by George Crawford

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Just a few short years ago, a LED retrofit was all about the Con Ed incentives. Back then utilities were making a big push to prime the LED retro-fit pump and priming the pump came in the form of very high rebates. It was not unusual for rebate funding to cover the entire cost of the LED product for a qualifying retrofit project. Today that picture has changed. Rebates are lower, much lower, more in the range of 25% of the cost of the LED product for a commercial retrofit and even lower for multifamily projects. Given the trend line, expect rebates to go even lower and become a much smaller part of any potential LED retrofit. Importantly, however, there is a new economic factor in the mix that is more valuable than any rebate. This factor is the improved performance of today's LED products as compared to those of just a few years ago.

Consider the economic model of a LED retrofit. The rebate itself is a one-time benefit which lowers the cost of initiating a retrofit. Product performance, however, is the ingredient that generates the year after year utility bill savings which is the economic underpinning of every LED retrofit. Performance can be measured by the lower levels of electric consumption that result from the replacement of high energy consuming lamp products with energy efficient LED products. It can also be measured by the increasing longevity of LED products. The longer the useful life of the installed LED products, the better the economic return - both from the perspective of the accumulated year to year utility bill saving, as well as, the lower levels of lamp replacement and related maintenance costs. The key ingredient to the overall savings benefit ties back to the original purchase of the LED products. Retrofits with the highest quality and the longest lasting LED products will be the retrofits that generate the best investment returns.

Probably the most effective way to illustrate the dynamic between the longer useful life and the increased investment return is to analyze the financial model of an actual LED retrofit (rounded numbers).

This model is based on an existing commercial facility, a Con Ed customer, located in Queens. The facility has a mix of lighting products – including troffers, high bays, fluorescents and incandescents totaling 3,200 individual lamps which currently consume 2 million kWh on an annual basis. Using a

Con Ed billing rate of 15 cents, the starting point is their annual electric bill of \$300,000. The cost of the LED product selected to replace the existing 3,200 lamps is \$200,000 - less the Con Ed rebate of \$50,000 - for a net product cost of \$150,000. In house electricians along with building staff will perform the installation for a charge of \$50,000. The annual utility bill savings with the installed LED product will be \$200,000. With an "installed cost" of \$200,000 and annual utility bill savings of \$200,000, this retrofit will generate a one year payback. While the one year payback in this example exceeds the average retrofit payback (usually two years), it serves to demonstrate the importance of product longevity. The first year of savings will pay for the retrofit project. Then the \$200,000 annual savings that accrues in the second year and every year thereafter funds the economic return of this project. If the LED products purchased for this retrofit had a five-year useful life, this retrofit project would have generated total savings of \$800,000 by the end of the fifth year. If, however, the useful life of these LED products were extended to a total of 10 years, then the accumulated savings would increase to a total of \$1.8 million over the ten-year period.

The message this model is sending is that the longer the useful life of the LED product, the higher the increase in the economic return of the retrofit. With LED product longevity as the key ingredient to a successful retrofit, start the product selection process by focusing on those manufacturers that offer quality LED products with extended warranties.

In terms of identifying specific LED products with extended warranties applicable to most retrofits, we would recommend investigating Universal Lighting which has a line of LED products backed by 10-year warranties. Their LRA and LRK retrofit assembly product series are designed to retrofit existing fluorescent lighting in basement and service areas. Universal products have an L 70 rating – 70% of the lumen output certified for 140,000 hours – 15 years 24/7. The TerraLUX line of stairwell fixtures – the SL Series – also comes with a 10 year warranty. These fixtures have bi-level and battery back-up options. In many jurisdictions, code will require the bi-level and battery back-up features. TerraLUX also offers retrofit options for existing hallway lighting fixtures - again with a 10-year warranty.

To achieve the best result, we recommend modeling LED retrofit projects with the selected LED product as the initial step. As for the project model itself, work with a Con Ed Market partner with access to Con Ed modeling technology with a proven track record of accessing Con Ed rebates for qualifying projects. Rebates may now be at lower levels, but Con Ed involvement with their retrofit inspections and oversight are a valuable contribution to the success of any retrofit.

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