

Case Study - How a small Parish Council took control of its electricity costs and implemented a cost-effective proposal to replace their old sodium streetlights with modern LED streetlights.

Introduction

Everyone planning to improve their street lighting and make sufficient savings to justify the cost, will have their own issues to negotiate depending on their particular circumstances. For instance, our Parish Council had an unmetered supply for 26 Sodium Streetlights that were expensive to run, unreliable and likely to be phased out in the near future. These included 12 lights on wooden electricity board poles, 11 on steel poles, 2 on concrete poles and one ornamental faux Victorian steel pole. The process also required the 2 concrete poles to be replaced with steel poles and one ex electricity board, ivy clad and rotten wooden post to be removed from a villager's garden and replaced with a steel pole alongside the adjacent footpath.

The Parish Council

We are a very small Parish Council, with limited resources. We had little knowledge about our streetlight inventory or how we were charged, so we set up a group of 4 volunteers, including one of our 4 Parish Councillors to research the LED streetlight opportunity and report back to the Parish Council with the objective of funding the upgrade without having to increase the village precept. A sequence of activities followed to enable this to happen.

Approach

1. Our first task was to prepare a Streetlight Log that identified the total number of lights we were responsible for and each light's technical specification, which did show inconsistencies with what our provider was invoicing us for!
2. We then produced a location map that showed the position of each light in the village. This proved very helpful for general communication and in subsequent quotation requests.
3. We analysed our electric invoices to understand how an unmetered electric supply system works and how our electricity provider was billing us. We learned that we had 2 accounts (MPANS) – 1 for the streetlights and 1 for the photocells used to control the sodium streetlight fittings.
4. We researched the LED technology to get a better general understanding of what was currently available.
5. We reviewed potential providers and installers of LED streetlights, decided on the most appropriate three, based on location and reputation and requested quotations.
6. On receipt of the quotations, we held interviews with each of the companies.
7. We decided which quotation we wished to accept and then looked for references from 3 councils that the company had worked for.

8. We then had a sample LED light fitted to one of our poles to assess its suitability and get feedback.
9. Then the focus turned to potential cost savings, which we identified as:
 - a. Reduced Electricity Usage and Electricity Cost per kWh
 - Electricity Usage - We carried out numerous potential cost savings, comparing suppliers LED running cost data versus our historical electricity usage. However, eventually we found out that if you provide National Grid with the technical specifications of your proposed street light inventory and how you want the lights to operate, they put the data into their algorithm and produce a forecast of how many kWh your proposed installation will use per annum. This can be compared to your existing Unmetered Supply Certificate (or your actual billed usage kWh) to show the annual reduction in electricity usage. Once the installation has been completed, National Grid will provide an Unmetered Supply Certificate, which is used by your chosen electricity provider as the basis for future invoicing. Our annual electricity usage in kWh was forecast to reduce from 6,434 kWh to 1,086 kWh for our 26 streetlights.
 - Electricity Cost - As we were approaching the end of an attractive fixed price contract with our electricity provider, we had to estimate what the future kWh cost would be. We used the industry standard, Cornwall Insights Website to help do this, to see how much the cost per kWh was likely to increase at the end of our contract.
 - Once we had the annual usage electric forecast in kWh and the projected cost of future electricity per kWh, we were able to evaluate the projected annual cost and compare it to what future electrical costs would be if we continued with our sodium lights.
 - b. Reduced Maintenance Cost – Our proposed LED lights, plus the installation works are guaranteed for 10 years and the photocells for 8 years, so the projected maintenance costs for the foreseeable future would be very little, compared to an increasing annual maintenance expense for the existing sodium lanterns.

Funding

Our Parish Clerk organised the 'Funding Proposal'. We were able to allocate approximately 25% of the cost of the LED upgrade from our reserves and the balance was made up from a £15K, 10-year loan from the Public Works Loan Board. There is a strict process to go through to secure a PWLB loan, including obtaining approval for the loan from the Department for Levelling Up Housing and Communities. Working with your Association of Local Councils (ALC) is also key to successfully obtaining a loan. WALC is the Warwickshire Association. This loan will be fully serviced from the savings from our reduced electricity and maintenance cost. Consequently, there will be no precept increase due to the LED streetlight upgrade.

Installation

We decided to give the installation contract to Electrical Network Contractors Ltd (ENC), Buckingham because they were cost competitive and had the required accreditations to handle the DNO transfer to new streetlight columns and fitting new IP rated weatherproof enclosures with 25 Amp cutouts and 10-amp fuses, which was necessary on the wooden

poles where the electric connections dated back to the 1950s. They recommended 13.1W Urbis Schreder, Dark Sky approved LED fittings, controlled by a photocell that dims 50% between midnight and 6.00am. The installation was carried out on time and to quotation with a positive attitude to overcoming any issues. The Parish Council rate ENC very highly.

Summary

The installation was completed in March 2024 and our cost savings are in line with our projections, although we did have some difficulty finding a supplier that would provide us with an unmetered account because of the significantly lower electrical usage we would have, due to the LED streetlight installation. Eventually our Parish Clerk was able to get a very good 3-year deal through Clear Utility Solutions. The feedback from the village has been very positive.

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