

**SAFER STOCKTON PARTNERSHIP**  
**STREET LIGHTING - 'INVEST TO SAVE' STRATEGY**

**Detail:**

There have been inordinate increases in energy prices in recent years. The cost of electricity for lighting the highway network has more than doubled in the last four years. In terms of cost, the energy bill for street lighting was **£512k** in 2004/5 and this has risen to approximately **£1.2m** in 2008/9.

However, there have also been significant improvements in street lighting technology and the control of street lighting energy consumption.

As part of a scrutiny of the street lighting service in 2006/7 and Cabinet report (4<sup>th</sup> January 2007), one of the approved recommendations was that officers explore the technology available for street lighting with the task of developing an 'invest to save' strategy, namely:

**Project 1: Dimming of street lights**

A small-scale street lighting experiment was undertaken in Darlington Lane to determine the potential energy savings that may be achieved by 'dimming' street lights. The meter readings on site indicate that a 50% reduction in lighting levels from midnight to dawn were producing up to 30% savings in consumption.

It is evident that there are significant potential savings to be made by extending the 'dimming' of street lights in strategic locations. It is proposed to undertake further extended trials across the Borough. The proposal is to introduce dimming of street lights on those streets indicated as Appendix 1 to this report. It may be noted that the sites are restricted to main roads and industrial estates. It is not proposed to introduce dimming on residential estates at this stage. The dimming will be restricted to hours of minimum activity i.e. typically between midnight and one hour before daybreak.

One of the significant benefits of the dimming technology is that it is controlled by computer from the street lighting office. Therefore, should there be any evidence of increased accidents, ASB or adverse public reaction then it is possible to revert to 100% power at any time.

The success of the dimming trial will be assessed over time and used as a basis to determine the business case to roll this project out in other locations in the Borough. This project will manage the dimming of 966 street lights and produce annual savings of up to £28k.

**Project 2: Replace Photo-electric Cells**

All street lights in the Borough are controlled by photo-electric cells. By this technology, street lights automatically switch on and off at a particular lighting level. There are new photo cells which slightly amend the lighting levels which trigger the lights to switch on and off. The effect of this is that street lights would switch on approximately half an hour later in the evening and switch off half an hour earlier in the morning. Again, the proposal is to restrict their installation to principal roads, main

distributors and industrial estates. Residential roads would not be affected by the scheme at this stage.

This project will entail replacing **1514** street lighting cells and save nearly **£10k** per annum.

### **Environmental considerations**

It is recognised that street lighting has an effect on the environment in the form of greenhouse gases and the increase in light pollution. One of the options for reducing this is to switch off street lighting. However, this does not take into account the fact that the public at large and road users in particular benefit from its provision and operation.

In Stockton we have taken into account the advancements made recently in technology to design and introduce a street lighting network that both reduces energy consumption and emissions whilst not compromising public safety.

Each of the above proposals has been based on the reduction in the use of electrical energy by reduced operating hours, reduced lighting levels or a combination of both. As well as reducing the consumption of electrical energy these measures will also provide reductions in light pollution. The simple switching off of a streetlight, or reduction of its light output for a defined period of time, will obviously reduce the level of light pollution during that period; however, it will not reduce the level of light pollution at times of full operation. The use of modern light sources in high performance optics can show reductions in energy consumption as well as reductions in light pollution if the lighting class is carefully chosen to reflect the use and location of the road, whilst still maintaining the amenity provided by the lighting system.

### **Conclusions**

There are many ways in which the use and thus the cost of electrical energy for street lighting can be reduced; however, these will generally require the authority to 'invest to save'. The proposals detailed in this report demonstrate the Councils commitment to reducing energy cost and the negative environmental impact caused by street lighting. The innovative use of modern technology will be designed into the future street lighting infrastructure throughout the Borough.

It is recommended that the Safer Stockton Partnership board support and endorse the 'invest to save' strategy.