

## Efficiencies in Street Lighting

Budgets for the provision of street lighting services are being hit just as other budgets are but this pressure is not especially new in this area of work. Energy prices have increased rapidly over recent years and the local government lighting sector is used to innovating to meet this challenge. The public are now used to thinking of street lights existing in every street but people in rural areas or those living on un-adopted roads will know this is not quite the case. At the other extreme extensive stretches of the motorway and A-road network are lit for many hours at a time. It is clear to see the variety of situations in which street lights and signs are illuminated as well as the scale of the lighting infrastructure.

### 1. Service costs

The following table highlights the average percentage spent on each element of the service and is derived from APSE performance Networks data.

Area of operation	% of total
Energy costs	42.8
Other internal maintenance costs e.g. vehicles, equipment, CECs, columns subject to knock downs.	13.7
Day to day maintenance	18.9
Bulk replacement	16.0
Client management costs	6.8
Inspection	1.8
Total	100

Although it must be remembered that these are average costs there will be an element of variety around each of the individual figures. The general point is a clear one; energy costs take up a large percentage of the costs of providing a street lighting service.

### 2. Energy costs

As energy costs make up such a large element of the cost of providing the service it is here that significant savings can be made, even through relatively small improvements.

Most local authorities purchase energy through central contracts or purchasing consortia. These arrangements should be frequently reviewed to ensure lowest pricing and consortia spend a significant amount of time doing just this and remaining aware of trends and volatility within the market. The UK's reliance on foreign sources of energy places us at the mercy of a range of factors often outside our control including political instability in the Middle East and former Russian republics which feeds through to higher prices. Due to the amount of energy purchased and the scale of prices paid, this is an area where local councils should be taking as much advise

from purchasing experts as possible. It is imperative that they take advantage of changing prices, get the duration of contracts right and acquire from the most reliable sources.

Of course the cost of energy is only one side of the story and councils also need to take account of energy use. A council's commitment to reducing its carbon footprint is also a major factor and will influence all decisions relating to energy use.

### **3. Switch off**

Some councils have decided to switch off parts of their street lighting network in an attempt to reduce the amount of energy used. This has clearly had the desired effect but it does not come without problems. Although the focus has been on the need to cut costs, the benefit of street lighting in terms of addressing the fear of crime and reducing road accidents should not be underestimated. This is an emotive issue and one which has been raised in a number of councils where street lights have been turned off. An alternative has been for every other light to be switched off along a stretch of road to retain lighting but at a reduced level.

Partial switch off refers to switching lights off between certain hours such as 3 am and 5 am or at times of least use. In practice switch off schemes have been preceded by a programme of safety inspections and tests for the columns and lamps involved. This is an associated cost which may be significant and should be considered as part of the switch off decision.

### **4. Dimming**

Dimming can mean reducing lights by up to 50% across a large or small part of the network. There have been some examples where small scale trials have taken place which have involved a reduction in the amount of light emitted over a period of time. Local people have not noticed that there had been a reduction in the amount of light emitted which can be taken to mean that the existence of functioning street lights is enough to address the fear of crime rather than the amount of light given off from them. Again dimming of street lights means a reduction in the amount (and therefore the cost) of energy used.

### **5. De-commissioning**

Although councils are under a duty to maintain street lights which are in existence, they are under no obligation to provide street light in the first place. As a result one option for councils is to remove some of their stock without a requirement to replace them. This will mean there is no longer a need to maintain them and there will also be a reduction in the energy cost. Of course the policy decision to remove lights may be a difficult one to take but it remains an option.

### **6. Lighting stock**

Many councils are in a position where a large percentage of the street lighting stock is many years old and in need of renewal as a result of inadequate investment over a period of time. Others have been through large scale replacement programmes and are benefiting as a result. The columns are in better condition and light usage is more efficient. The cost of responsive repairs is less because the overall stock is in better condition and the principle of invest to save is clear in these cases.

Needless to say the chance of funds being available for capital investment in street lights in the near future is much reduced. The focus will be on repairs rather than renewals and that puts those councils with a newer stock in an even better position.

## 7. **Technology/renewable energy**

Innovation in street lighting is wider than just reducing usage levels. A number of councils are testing mini wind turbines on individual street lights to generate enough energy to power the individual street light as well as put extra energy into the network. These schemes reduce the cost of energy for the individual light, potentially to zero, whilst any excess energy produced is fed into the network resulting in feed in tariffs (FiT) coming back as a revenue stream to the council. The turbines are 'on' all the time of course whereas the lights are only on during certain periods of the day meaning the likelihood is that more energy will be produced than used.

The same is true of mini solar panels. These have also been trialled to power individual lights and signs and the context is similar. As possible sources of free energy as well as reducing energy costs they cannot afford to be ignored. The problem remains that access to the initial investment is very restricted but consideration can be given to using prudential borrowing where an income stream to support the borrowing can be identified such as from FITS.

## 8. **Staff costs**

Whilst staff costs are a small relative cost of this service the usual rules apply. Sharing staff across of service areas, such as electricians working on building maintenance jobs as well as lighting jobs, lessens the chance of the staff not running out of work.

## 9. **Inspections**

Inspections account for a very small part of the cost of service provision. It has traditionally been difficult to inspect street lights partially because they must be inspected when they should be on and partially because inspections want to avoid rush hour. Both of these factors limit the amount of time when inspections can be done and mean night time inspections are most appropriate but there is an associated staff cost.

One approach by some councils has been to stop inspections entirely and rely on local people to call into the council to report street lights which are not working. This should be accompanied by a media campaign requesting support from members of the public. Some councils have reversed this decisions after a poor response from the public and an unacceptable number of non working lights which have remained unreported.

## 10. **Performance**

In terms of restoring street lights to working condition local authorities significantly out perform regional electricity suppliers. This is an element of the service which requires attention not only because the difference between the two providers is stark but also because poor performance in this area has an impact on public safety. Furthermore it impacts upon the quality of the environment and it colours the public's view of council performance.

The level of performance by regional electricity suppliers is reflective of the priority that they give to street lamp repairs and it appears that some councils feel they have no influence on the performance of the electricity suppliers. Although councils have the capacity and skills to undertake this work they are not allowed to do so. Some councils are making agreements with electricity providers to carry out some of this work but this is unusual. Even though this may be accurate, councils must be seen to be confronting this rather than accepting it as an immovable

situation. In terms of efficiency this would provide an extra scope of work for councils and so potentially increase revenue as well as improving performance levels.

#### **11. Central establishment charges (CECs)**

CECs remain a contentious area of cost. There is a balance to be found between allocating them in a way which is as fair as possible without moving to the extreme and creating a bureaucracy which accounts for the usage of central services to the smallest degree. The disadvantages of duplicate provision are well known and so should be avoided. By their very nature, the services paid for through CECs are centrally provided and managed. This central point of provision may well be within a specific department if scale warrants it, but however it is managed, the point is that such decisions should be taken with the benefit of the whole organisation in mind.

#### **12. APSE Comment**

It can reasonably be expected that oil and energy production and supply costs will increase. As such the discussion around dimming, partial and full night time switch off and energy generation via solar and wind sources will continue. However this must be weighed against the community safety/fear of crime/road accident debate which may arise.

Managing energy costs will be a major issue not only for street lighting and highways functions but for the entire council and investigation and management of council's energy bills is an activity which will undoubtedly acquire a high profile.

APSE exists to support excellent local public services and recognises there will be pressures to seek cost reduction as a consequence of the current and anticipated squeeze of local authority funding. If reductions in staff numbers are being considered in street lighting services, APSE advocate that the trade unions and staff are fully involved where any changes to the workforce are planned in response to reductions in expenditure.

Should a member authority have a pressing difficulty, APSE has a range of assistance available to inform the search for efficiencies. This ranges from average productivity figures, benchmarking information from APSE performance networks through to full consultancy support from APSE best value consultancy.

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