



Street Lighting Strategy

January 2011



Powers and Duties



Highway Authorities

- Have the power, but not the duty to provide street lighting
- Have the duty to maintain street lighting in a safe condition

Aims of Street Lighting



Safety

1. Reduce night time accidents
2. Reduce night time crime
3. Pedestrians, cyclists, and vehicle users have more confidence and a greater sense of personal safety when using illuminated highways, cycle tracks, footpaths etc after dark.

Other benefits

1. Legal enforcement of 30 mph law
2. Encourage people to socialise after dark building safer and stronger sense of community whilst help sustain local economy

What has Changed?

The need for lighting remains however

- Increasing energy costs
- Political desires and expectations
 - financial savings
 - carbon savings
- Carbon Reduction Commitment
- Legislation



What has been our Strategy

Create a Street Lighting Policy that

1. Meets legislative and best practice requirements
2. Forges strong links into Councils Corporate Aims
 - Valuing the Environment
 - Safer Stronger Communities
 - Managing future development
 - Customer Focussed



Key Objective



Aligning with Council strategy

- Aim to reduce CO2 by 3% year on year after growth (Now 50% in 4 years)

What are we doing

Five key methods of mitigation

1. Maintenance of an accurate inventory
2. Avoid installing lighting where possible
3. Apply correctly BS when designing.
4. Smart design and linking schemes.
5. Utilise changes in legislation and Innovation

Consistent and systematic critical evaluation of process,
innovation, technologies and legislative changes





Evaluation of Materials, Technology and Innovation



How the evaluation works:

Consider 5 perspectives

1. People
2. Process
3. Customer
4. Financial
5. Environmental





Whole Life Carbon Evaluation Model					
Compare the five perspectives per item					
	People	Process	Customer	Finance (measured £'s)	Environmental (measured in CO2)
	Who are the people to carry this out? Are they able to do it?	How will happen? What is our supply chain? Are the material and technology readily available?	Who are they and what do they want. Is the concept feasible/legal	How much will it cost how much will it save?	How much CO2 to implement and maintain how much does it save?
Suitability of Product	Lighting Team	Apply the WLCM to establish performance	Developers and South Glos Council and residents	Cost of Evaluation process	Actual environmental impact of the process if any?
Manufacture	Manufacturer	N/A	N/A	N/A	Actual environmental impact of the finished product from inception to display
Purchase	Procurement team	Availability, Cost, Delivery, Reliability	N/A	Actual cost of capital investment	Actual environmental impact of the purchase process
Installation	Maintenance team	Ease of installation	Maintenance team	Actual labour cost	Actual environmental impact of the installation process
Disposal - retrofit and/or recycling of equipment	Maintenance team	Ease of disposal	South Glos Council and Residents	Actual landfill or recycle costs	Actual environmental impact of disposal
Maintenance	Maintenance team	Ease of maintenance	South Glos Council and Residents	Actual cost of maintenance	Actual environmental impact of the maintenance process
Overall Evaluation	Lighting Team/Procurement	Apply council Policies	Developers and South Glos Council	Whole Life Costs	Whole Life CO2 impact



Part Night PEC Final Evaluation Ring Road								
Evaluation		Financial			Environmental			
	Quantity	Finance cost per unit (£)	Net finance costs (£)	Overall financial costs (£)	Environmental cost per unit (Kg CO ₂)	Net environmental costs (Kg CO ₂)	Overall environmental costs (Kg CO ₂)	
consultation	1	£1,000	£1,000	£1,000	0 Kg	0 Kg	0 Kg	
manufacture	391	£0	£0		10 Kg	3,910 Kg	3,910 Kg	
purchase	391	£20	£7,820	£7,820	0 Kg	0 Kg	0 Kg	
installation	391	£1	£391	£391	0 Kg	0 Kg	0 Kg	
Maintenance (10 year Guarantee)	391	£2	£587	£587	0 Kg	0 Kg	0 Kg	
disposal	391	£1	£196	£196	0 Kg	0 Kg	0 Kg	
Capital financial costs:				£9,993	CO₂ emission generated by installing the scheme: 3,910 Kg			
Savings on maintenance and energy show savings yearly, data from "Scheme by Scheme Savings"								
<i>Based on 0.537Kg CO₂ / KWh; £0.10 / KWh; op. hours: 2458h (switched off b/w 24:00 & 5:00)</i>								
Evaluation		Financial		Environmental		Overall CO ₂ savings		
		Net financial savings (£ / year)	Overall financial savings (£ / year)	Net CO ₂ savings (Kg CO ₂ / year)	Overall CO ₂ savings (Kg CO ₂ / year)			
maintenance and/or energy		£15,390	£15,390	12,070 Kg	96,542 Kg			
Financial and CO ₂ savings over the evaluation period								
		Financial			Environmental			
	Total Capital cost (£)	Overall financial savings (£ / year)	Financial savings projected to the evaluation period (£)	Sum of financial savings (£)	Total Environmental cost (Kg CO ₂)	Net CO ₂ savings (Kg CO ₂ / year)	Overall CO ₂ savings projected to the evaluation period (Kg CO ₂)	Sum of environmental savings (Kg CO ₂)
	£9,993	£15,390	£15,390	£5,397	3,910 Kg	96,542 Kg	96,542 Kg	92,632 Kg

Opportunities Evaluated

- Switching Regimes (Technology)
- Part Night Lighting (Technology and legislation)
- De-illumination of signs and Bollards (Technology and legislation)
- Revised maintenance regimes (Technology)
- Removal of excess lighting (Applying BS)
- Linking new designs and schemes with existing road layout and maintenance program (Smart Design)
- Electronic control gear (Technology)
- Central Management systems (Technology) Ongoing



Flexible

- Originally developed to demonstrate strengths and weaknesses of so-called environmental claims of
 1. Bio Fuels
 2. Solar Power Lighting for example

The model has evolved to be applied to other situations including procurement and Electric Cars



The way forward



Consistent and systematic critical evaluation of process, innovation, technologies and legislative changes through 5 perspectives.



Questions

