

# The Case for LED Street Lighting

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# Centre for Carbon Measurement



## Climate data

Provide confidence and reduce uncertainties in climate data used for monitoring and modelling



## Carbon markets & accounting

Support tax, trade and regulatory instruments for carbon pricing and reporting



## Low carbon technologies

Accelerate development and assess performance of low carbon technologies

# Solid State Lighting – The case for LED street lighting

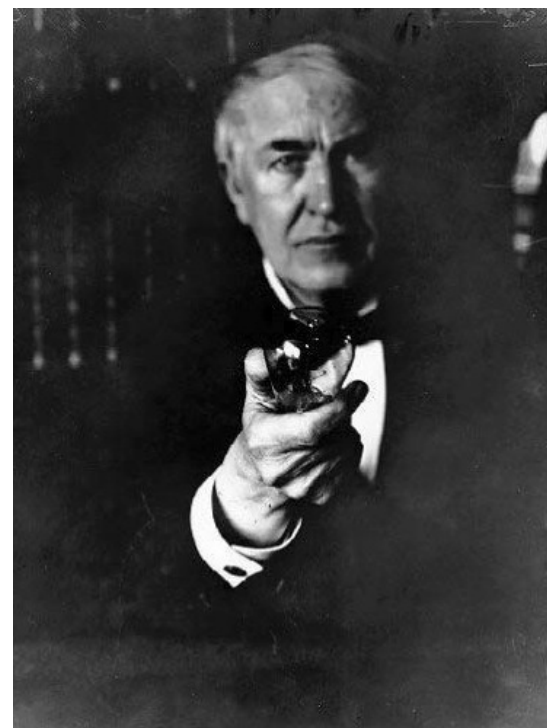
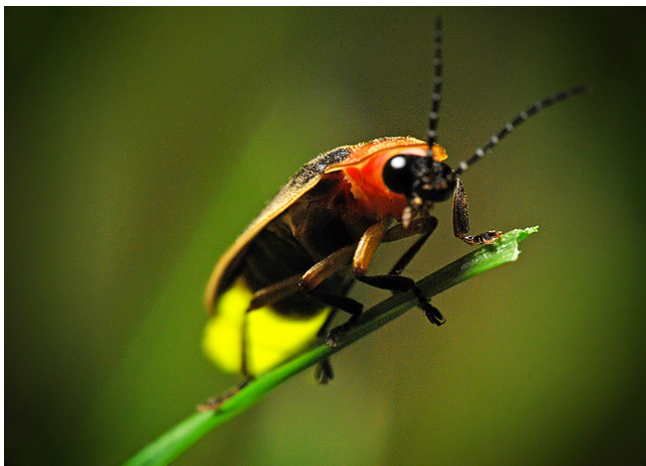


# Today...

- Lighting in context – why does it matter?
- LED street lighting
  - Benefits – a reminder
  - Case studies
  - LED market drivers and barriers
  - Lessons learnt – what is needed and what is ‘our’ role?

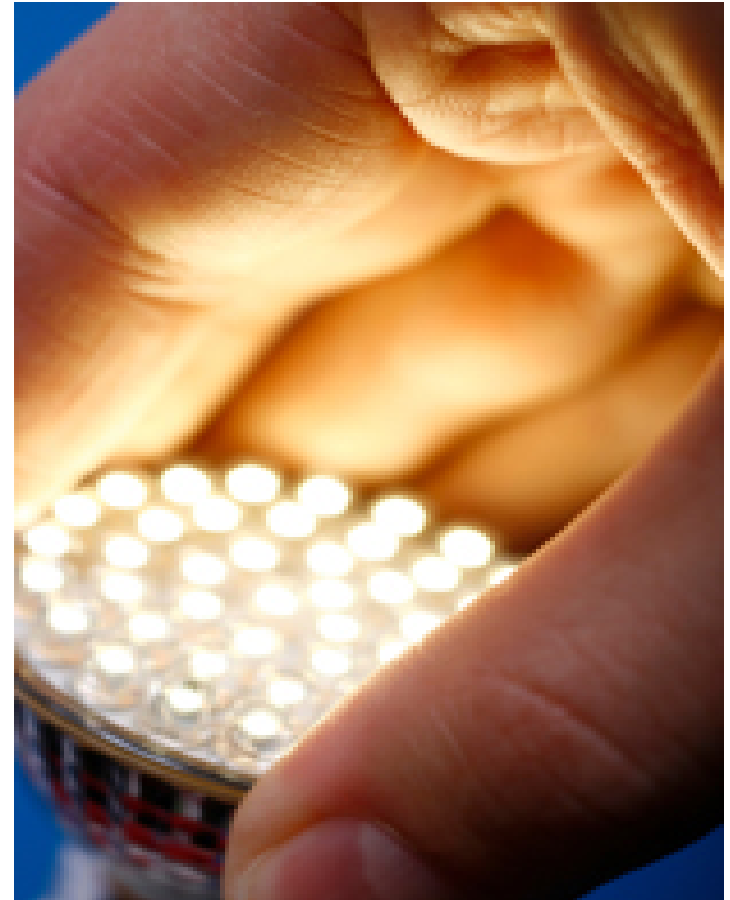


# Lighting in context



# Why does lighting matter?

- 33 billion lamps
- 19% of energy consumption
- 8% of global emissions  
(> 3x aviation emissions)
- USD 234 billion p/a



# Street lighting!



## British Standard Code of Practice BS 5489 (BSI, 2003b) :

“Road lighting encompasses the lighting of all types of highways and public thoroughfares, assisting traffic safety and ease of passage for all users.”

# Benefits – a reminder

- **Energy savings**
- **Maintenance savings**
- **Increased lifetime**
- **Reduced environmental impact**
- **Smart functions**
- **Light output**
  - White light
  - Controlled illumination





# Nottinghamshire

1. Costs - £150 million savings needed over 3 years
  2. Carbon emissions reduction targets
- £4.2 million p/a on street lighting energy -15% of total highways budget
  - UK's mandatory Carbon Reduction Commitment Energy Efficiency Scheme
    - added £400,000 p/a street lighting cost
  - 5,800 tonnes p/a CO<sub>2</sub> savings
    - saving £70,000 on the purchase of carbon allowances



# City of Los Angeles

- 140,000 street lamps (5 years)
- \$57million, 7 years projected payback
- Energy & maintenance savings: \$10 million p/a
  - Energy savings: >68 million kWh p/a
  - > 20,000 less repairs p/a
- 40,500 tons carbon saved p/a

Before



After



Clinton Climate Initiative – C40 Cities  
(2011). 'City of Los Angeles led street  
lighting Case Study'

## Case studies – street lighting successes

- LightSavers: energy savings of 53%
- Westminster City Council: wireless system
  - energy usage reductions of 30%
- London Borough of Richmond: motion sensors
  - energy costs reduction of ~ 80%
  - cut lighting pollution by 50% - local wildlife (e.g. bats)





## Drivers

- Cost
- Safety
- Environment
- Legislation
- Local development

– **Doing more with less** –

## Barriers

- Cost and spending cuts
- Awareness
- Doubt

# Lessons learnt?

## CFL market penetration

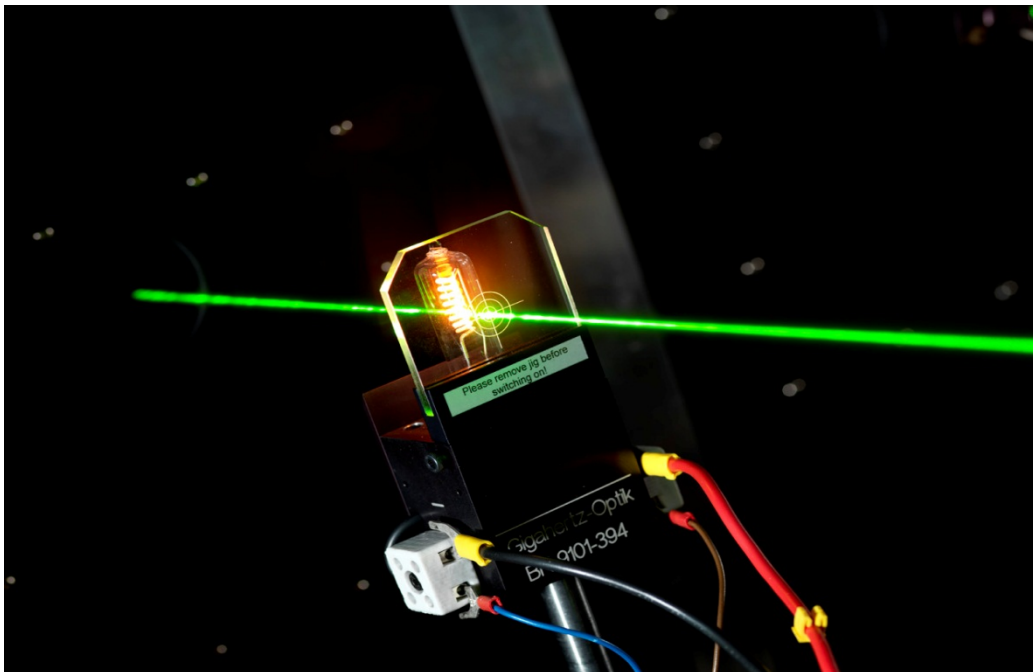
- Uncertainty
- Lack of clarity
- Miscommunication
- Disjointed education





# What is needed?

- Confidence
- Traceable measurement
- Collaboration





# Thank you!

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