



**Morag Wallace**

**20 August 2013**

- Low carbon and energy efficiency – the need for investment
- SFT's approach to facilitating investment
- Street Lighting Pilot Projects
- Scottish Street Lighting

# The need for investment

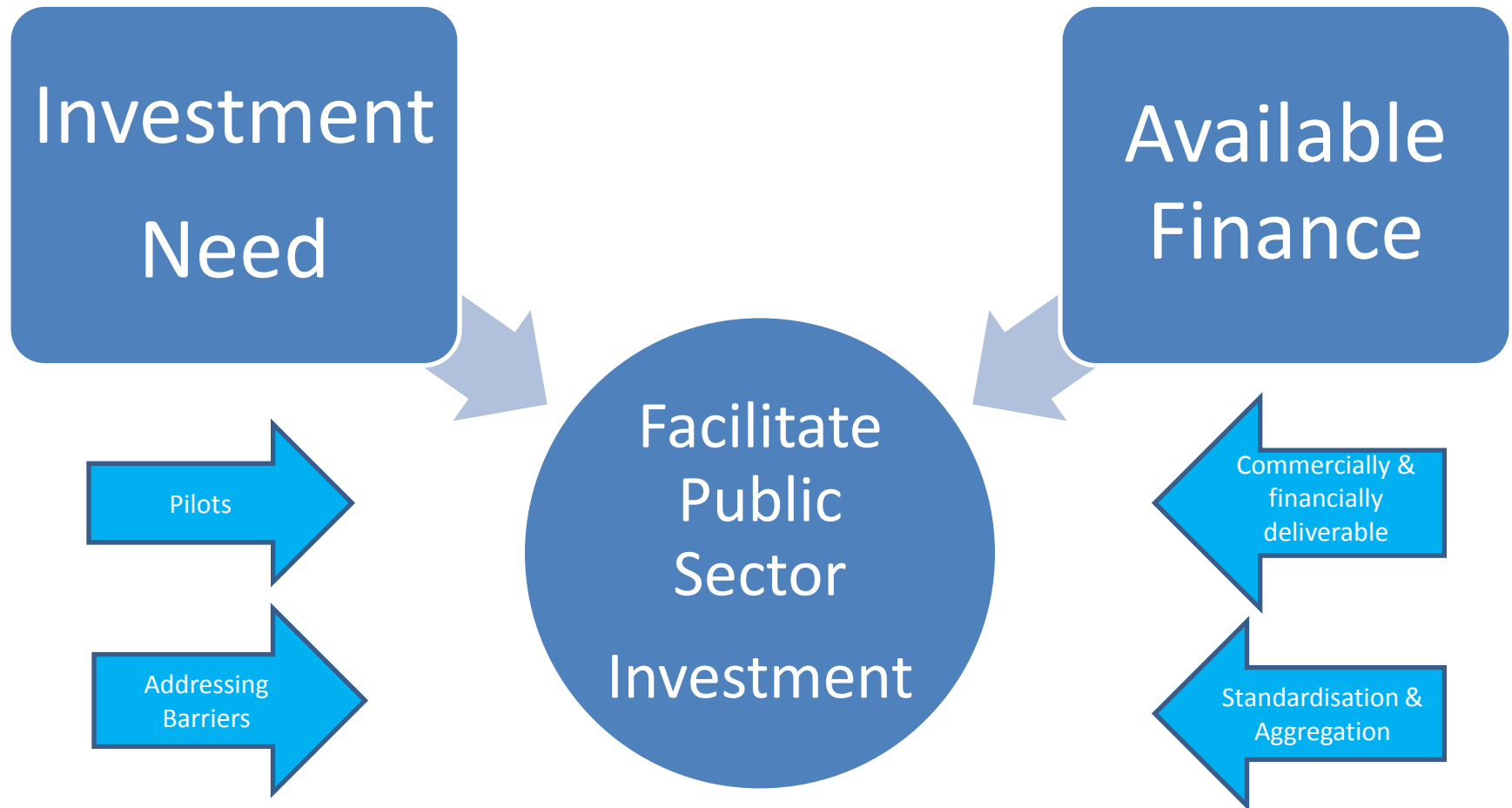
- Policy Drivers
  - Climate Change (Scotland) Act
  - Second Report of Proposals and Policies
  - Carbon Reduction Commitment
- Organisational Drivers
  - Reduced costs and lowers exposure to price volatility
  - Reduced emissions → carbon certainty
  - Economic Development – SMEs and jobs
  - Upgrading poor infrastructure



SCOTTISH  
FUTURES  
TRUST



# SFT's role in Low Carbon investment?

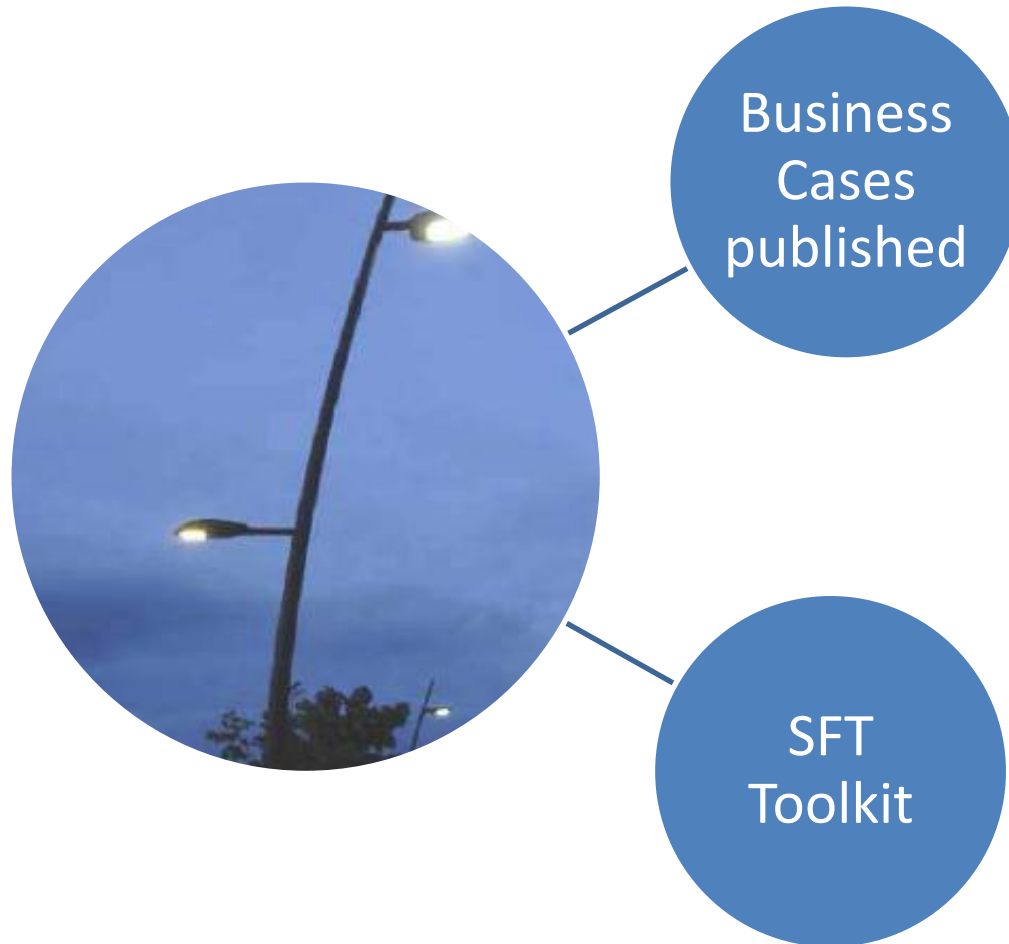


# Street Lighting Pilots

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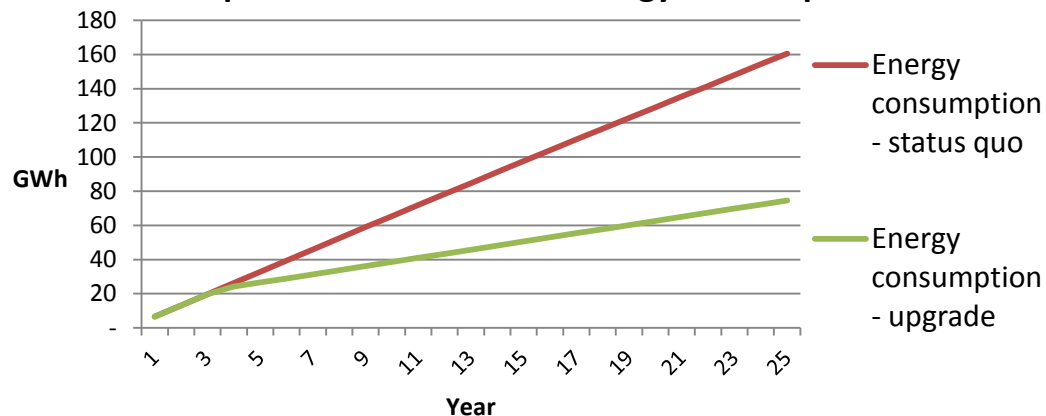
# Street Lighting Pilots



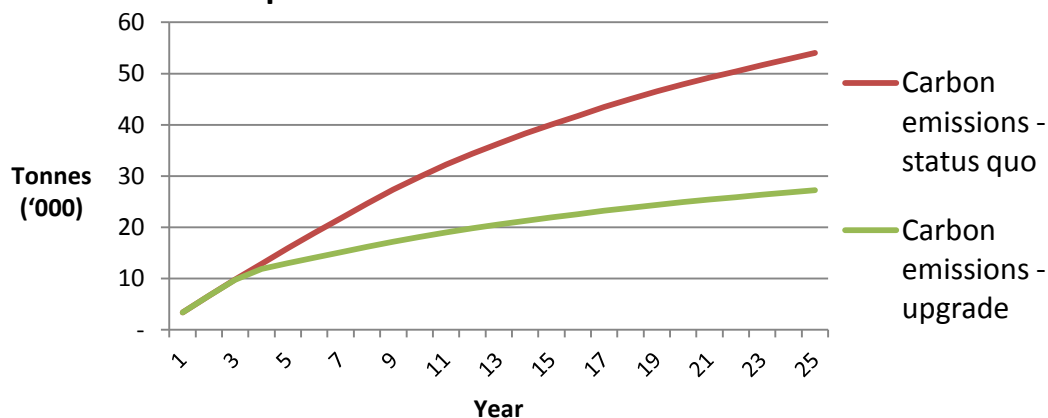
## The results

- reduces energy consumption by c.65% and carbon emissions by c.45%
- Payback 5-6 years pre-finance, 9-10 years post-finance
- Highlights: c.£300m investment delivers c.£900m savings after financing costs

### Comparison of cumulative energy consumption



### Comparison of cumulative carbon emissions







- Pan Scotland Street Lighting Programme – SFT to lead on supporting the development of the Programme
- SFT now considering procurement approaches
  - to aggregate purchasing power
  - to maximise economic development benefits
  - to make investment “easier” by addressing procurement early

# Points to consider

**Column  
Condition**

**Column  
Spacing**

**LED Cost**

**LED Efficiency**



# Contact Details

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## The existing problem.

- WDC recognised the risks posed by the condition of its street lighting infrastructure.
- Concerns in regards to the ever increasing cost of energy
- Impact of future burden of carbon tax on cost of energy associated with street lighting

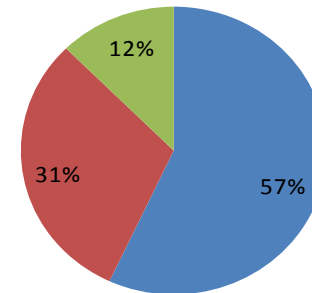


## Infrastructure details

- 16,067 street lighting columns
- 17200 lanterns
- 1045 illuminated signs and bollards
- 40% of infrastructure exceeds 40 years

### Lantern Type

SOX SON Metal Halide



## Existing costs

- Work undertaken by External term Maintenance Contractor - £485,500
- Electrical Power - £652,000
  - Almost 23% of the overall electricity costs for the Council
- Supervisory costs - £99,600
- Cost to provide and maintain a street light– approx £80 per annum.



## The way forward

- The outline business case required to establish that the energy efficiency project would be affordable and risk averse
- Project developed in partnership with SFT and EDC
- Technical advisor was Ove Arup Consultancy
- The project required to deliver
  - Reduce maintenance costs
  - Reduced energy consumption
  - Meet the Council's commitment to sustainability and reduced carbon emissions



## Preferred option

- Retrofit approximately 14000 lanterns with LED lanterns
- Investment required - £6.6m
- Procured through PWLB at assumed borrowing rate of 5% over 25 years
- Saving some £8.8m over this period
- Sensitivity analysis indicated that the investment would provide significant protection to the Council in event of future increases in energy costs and cost of carbon





## How are savings achieved

- Replacement LED lantern would require to be guaranteed for 20 years
- Dimming
- Trimming
- Supply market now realigning to the manufacture and supply of LED lanterns
- Reduced maintenance costs
  - No re-lamping
  - Reduced failures



## Expected outcome

- Over 50% saving in electricity costs and carbon savings
- Improved reliability saving approximately 40% of current maintenance costs
- Improved street lighting through provision of a high quality white light
- Improved sense of well being for our communities
- Anticipated cost to provide and maintain a street light reducing from £80.00 to £40.00 per annum



## Experience to date

Trial site installed in a housing development which was constructed some 25 years ago

Public consultation response –

- Improvement to lighting
- Agreement with the aims of the Council to introduce more sustainable infrastructure
- Mixed response about the reduced backspill
- No retro fit issues
- Scheme demonstrated savings



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**Thank You**

