
Implementing energy efficiency and low carbon technology
southend on sea
BOROUGH COUNCIL
southend energy
Fairer prices for local people

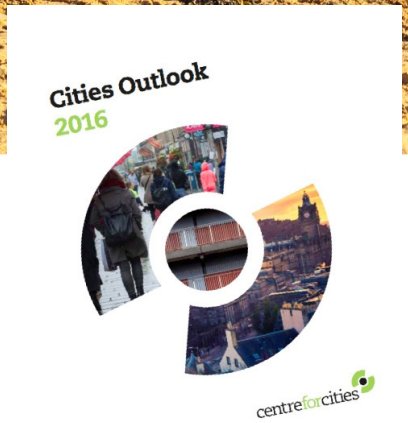
Southend Challenges

15% Most deprived LSOAs in England - Southend

- **16.1 sq miles land area, 178,000 residents**
- **73,900 dwellings, 10,000 Pre-payment meters**
- **25% elderly, above average single person occupancy**
- **18 Areas (15% most deprived areas) – 11 in 10% most deprived)**
  - **1/3rd of the total such areas in Essex**
  - **Health inequalities/Fuel poverty**
- **£4m energy procured, £1.5m charged out, £2.5m Council.**
- **Total CO2 emissions 804,000 tonnes**
- **2 largest energy spends**
  - **Street lighting 28%**
  - **Civic centre 14%**

Rank	Ref	National_Rank	Ward
1	E01015842	99	Kursaal
2	E01015852	108	Milton
3	E01015895	542	Victoria
4	E01015886	995	Southchurch
5	E01015916	1123	West Shoebury
6	E01015841	2209	Kursaal
7	E01015917	2427	West Shoebury
8	E01015897	2817	Victoria
9	E01015867	3173	St Laurence
10	E01015896	3261	Victoria
11	E01015887	3466	Southchurch
12	E01015840	3635	Kursaal
13	E01015880	3910	Shoeburyness
14	E01015875	3947	St Lukes
15	E01015828	4214	Chalkwell
16	E01015824	4255	Blenheim Park
17	E01015820	4712	Blenheim Park
18	E01015861	4815	Prittlewell

THE ‘GREENEST’ CITY IN THE UK



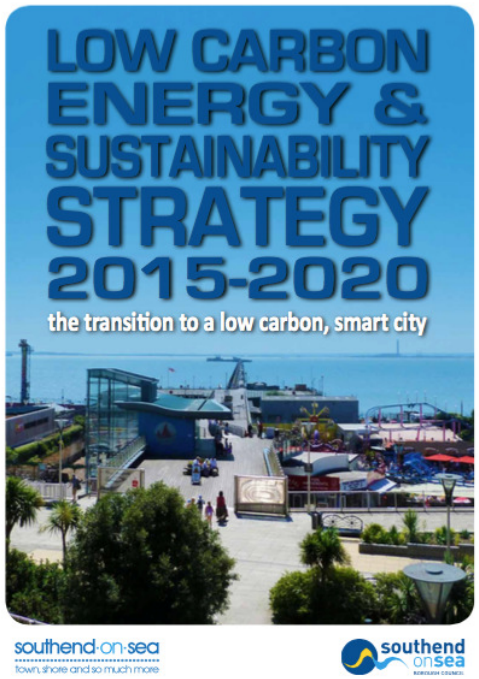
Annual Sustainability Report

A public commitment to report annually on the progress of LCESS.

SOUTHEND WEATHER

- **Hotter summers**
  - Up to 8°C warmer on average
  - Typically 30°C. Hottest day around 35°C
- **Drier summers**
  - 50% less rain
- **Heat waves more common and up to 10 days longer**
- **Warmer Winters**
  - Temperatures up to 4°C warmer on average
  - Typically 6°C. Reduced likelihood of frost, snow & ice
- **Wetter winters**
  - 50% more rain
- **Sea levels higher by up to 90cm**
- **More storms and extreme weather events**

- Typically, hotter drier summers, warmer wetter winters

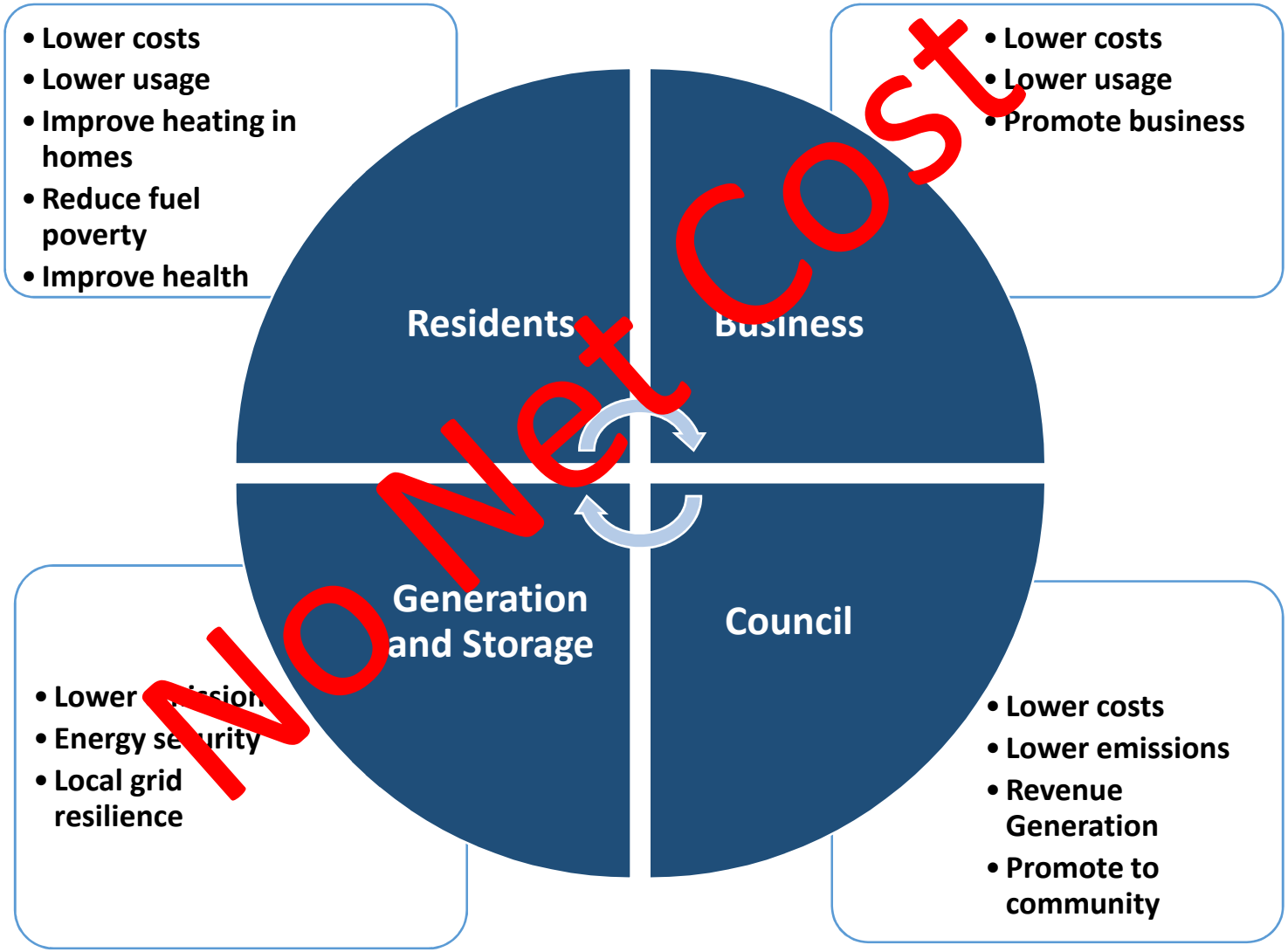


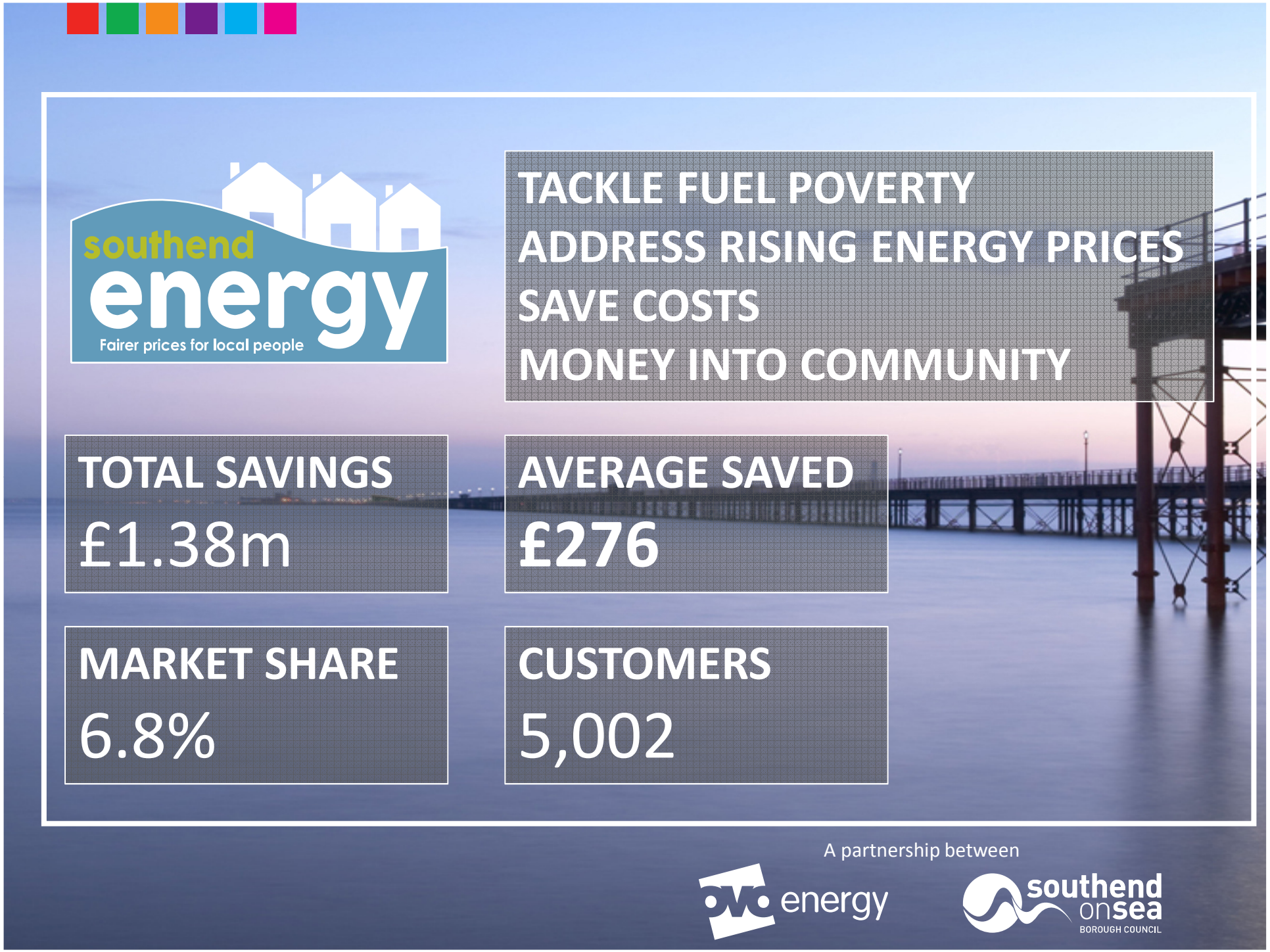
6 FOCUS AREAS:

- Carbon Reduction
- Policy
- Low Carbon Economy
- Sustainable Communities
- Sustainable Travel
- Climate Change Adaptation & Biodiversity

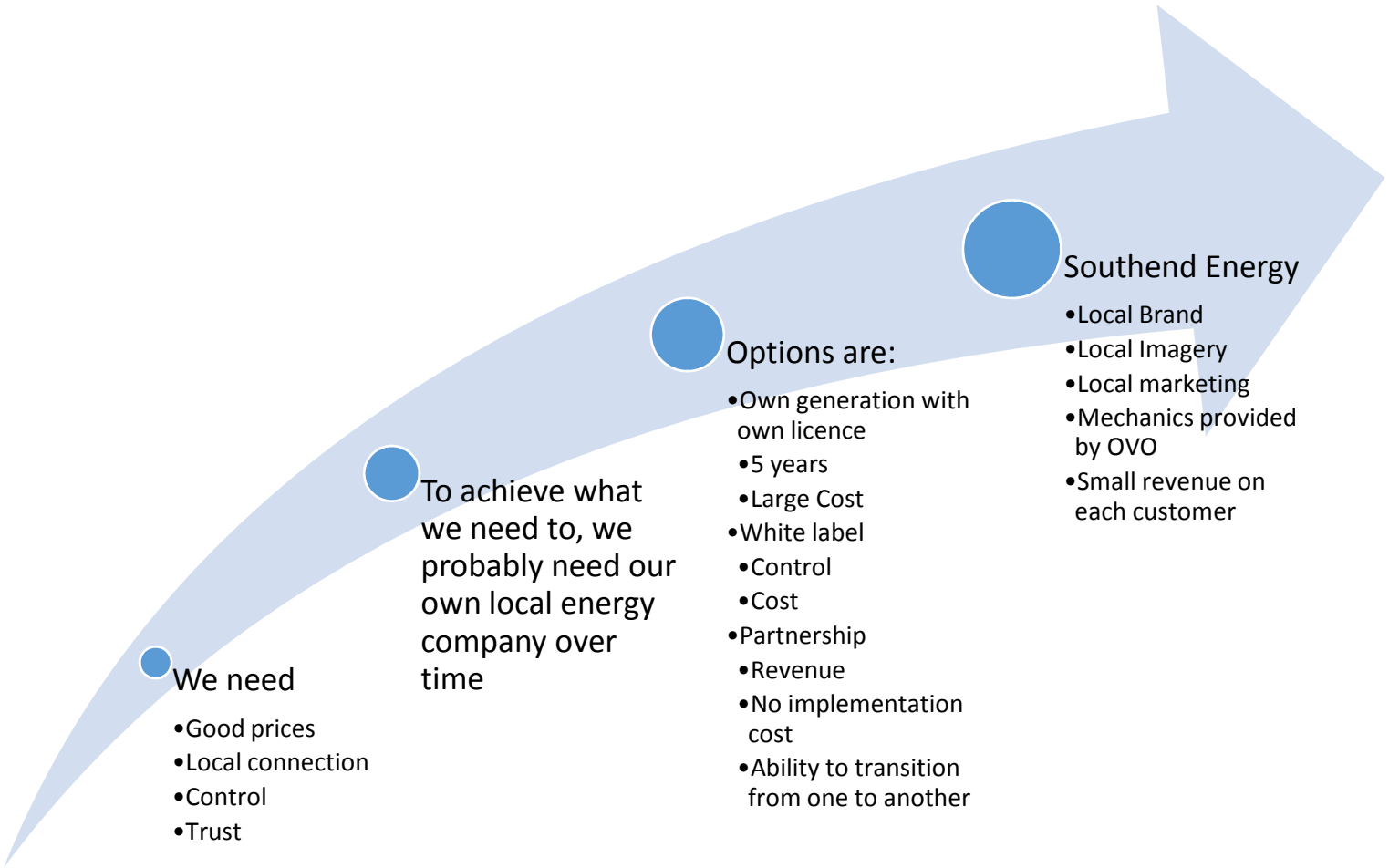
Energy Strategy Objectives

follows 25% gas and 15% electricity savings across previous 8 years in Council buildings



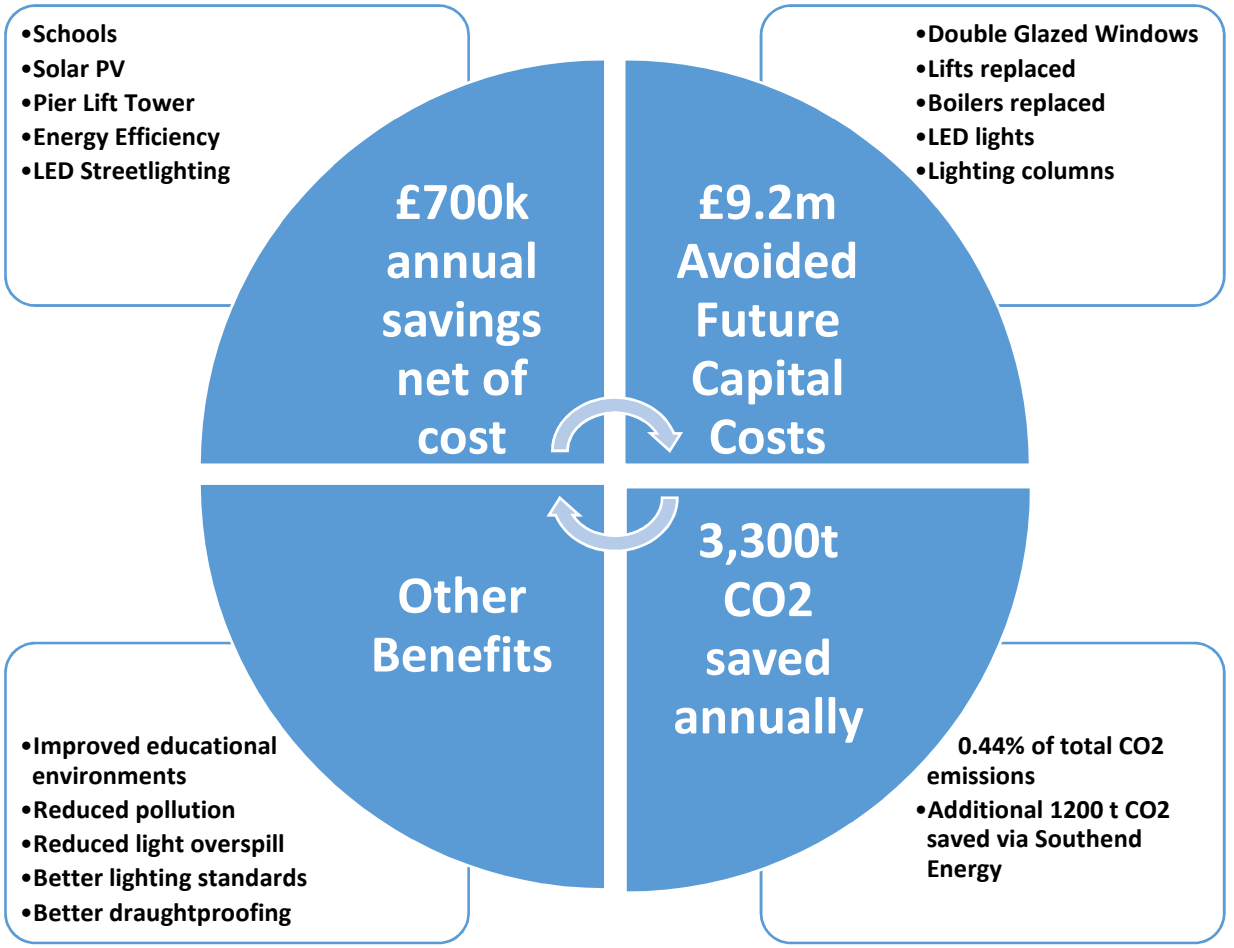

southend
energy
Fairer prices for local people
TACKLE FUEL POVERTY
ADDRESS RISING ENERGY PRICES
SAVE COSTS
MONEY INTO COMMUNITY
TOTAL SAVINGS
£1.38m
AVERAGE SAVED
£276
MARKET SHARE
6.8%
CUSTOMERS
5,002
A partnership between
ovo energy
southend on sea
BOROUGH COUNCIL

Why Partnership Approach?



Current Projects - £19m projects

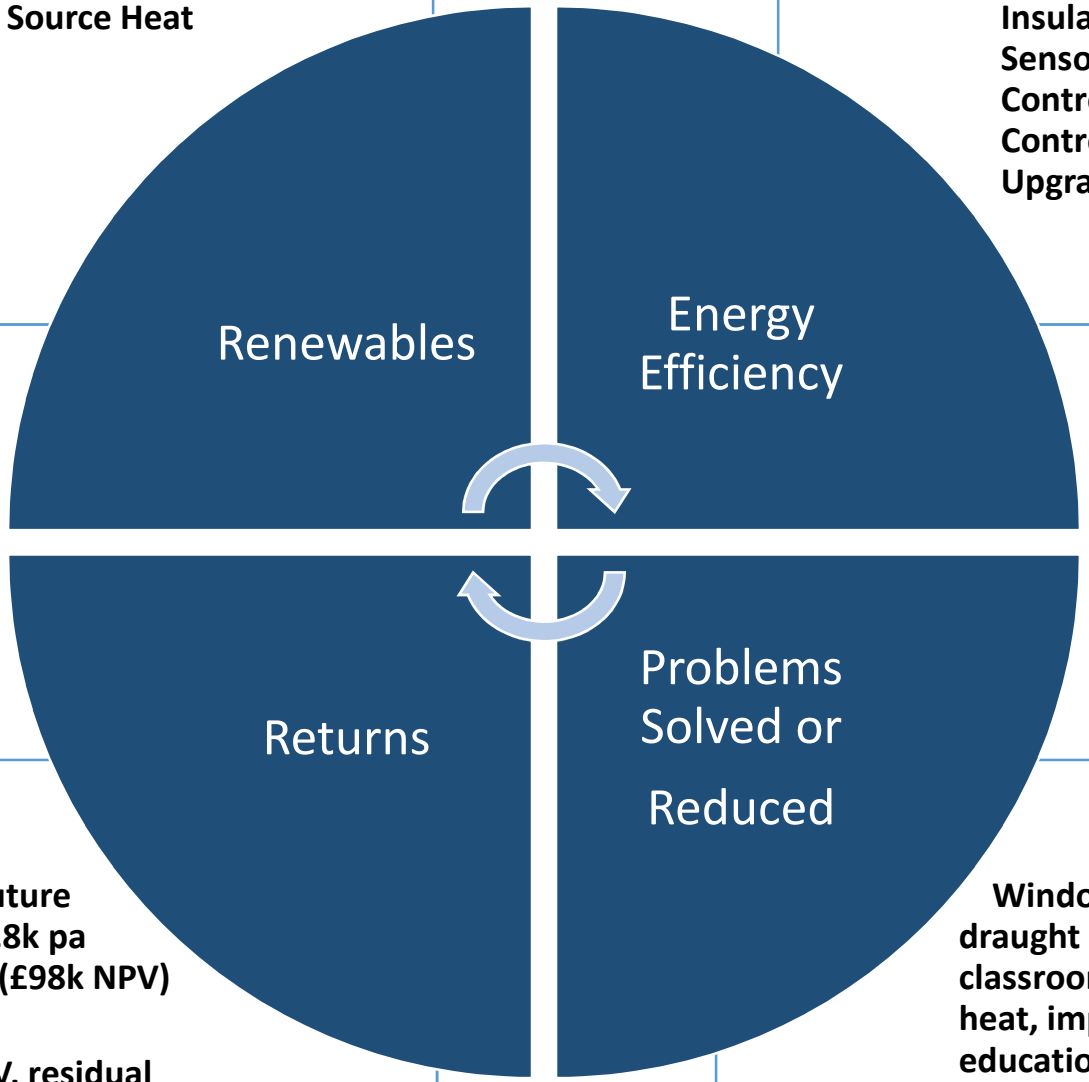
- Approach
  - Treat as 100% funded from borrowing
  - Annual returns 1-3% of capital invested net of funding cost



Worked Example – School £1.29m

- **Solar 241kWp, Biomass 199KW, Ground Source Heat Pump 85KW**

- **Windows Replaced, Insulation, Lighting, Sensors, Motor Controls, Heating Controls, Pool Upgraded**



- **SBC - Avoided future cost - £400k, £2.8k pa rising to £13.2k (£98k NPV)**
- **285 tCO2**
- **School £61k NPV, residual income c£74k+**

Window safety, draught proofing, in classroom control of heat, improved educational environment, pool available 365 days

LED Street Lighting Project

Originally conceived as a 5 year project

- **14,000 street lights**
- **4-5,000 items street furniture**

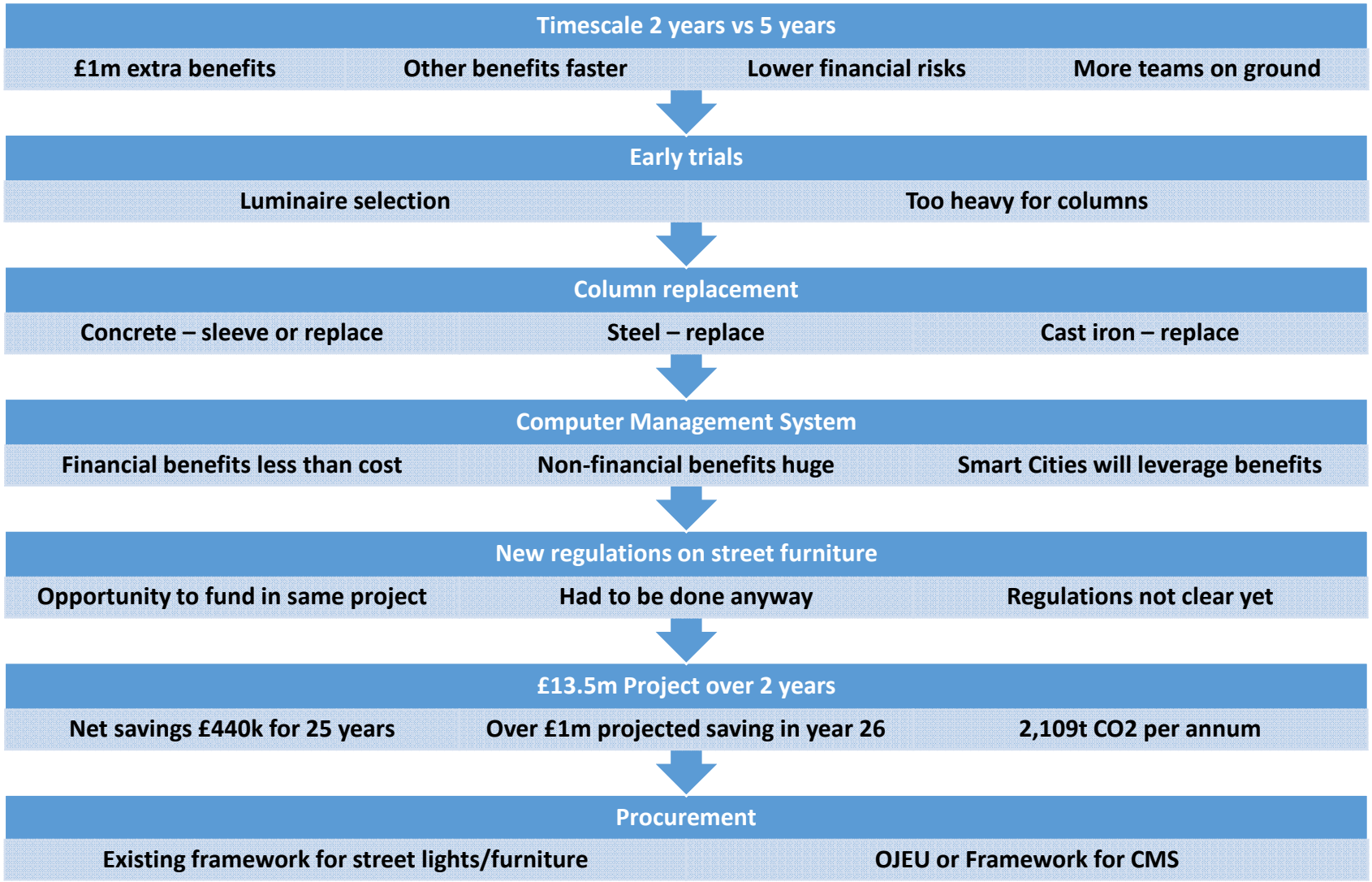
Financial benefits – 25.9m over 25 years

- **£19.6m energy**
- **£6.3m maintenance**

Other benefits

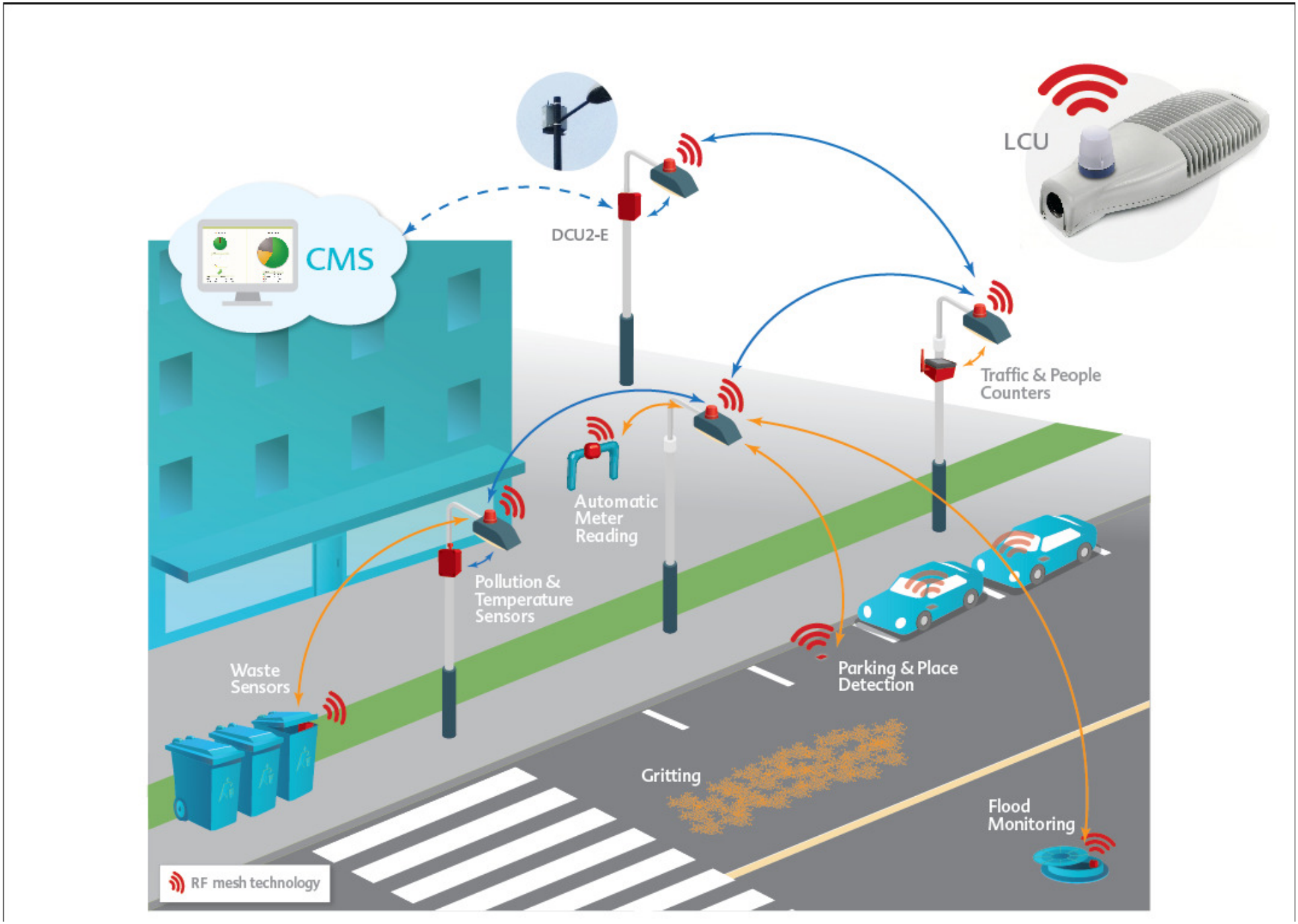
- **Not part night solution**
- **£7m avoided capital**
- **Central control of light levels**
- **Remote monitoring of failures**
- **Light overspill**
- **Improved night time visibility**
- **Reduced light pollution**

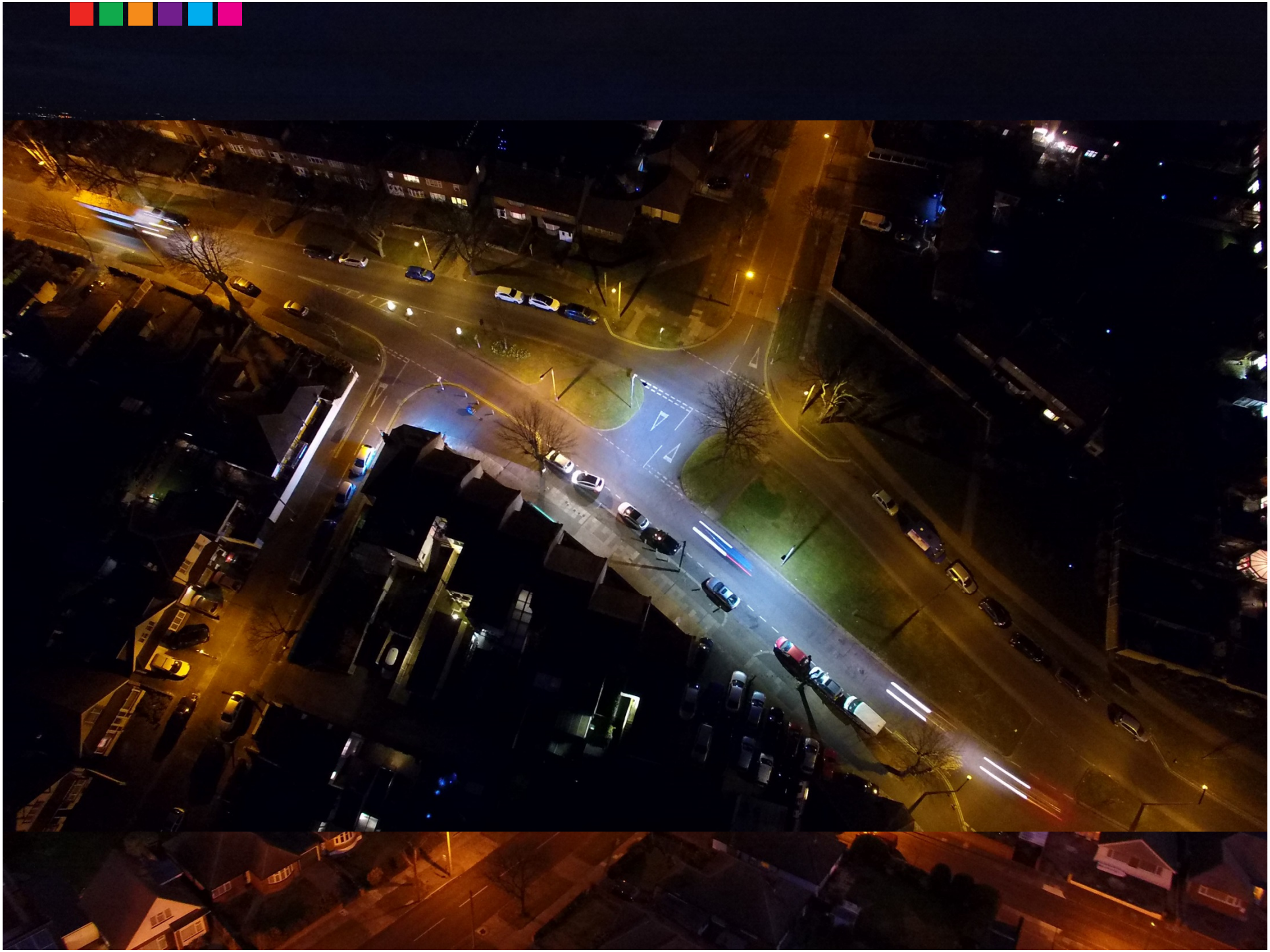
Street Lighting Project - components



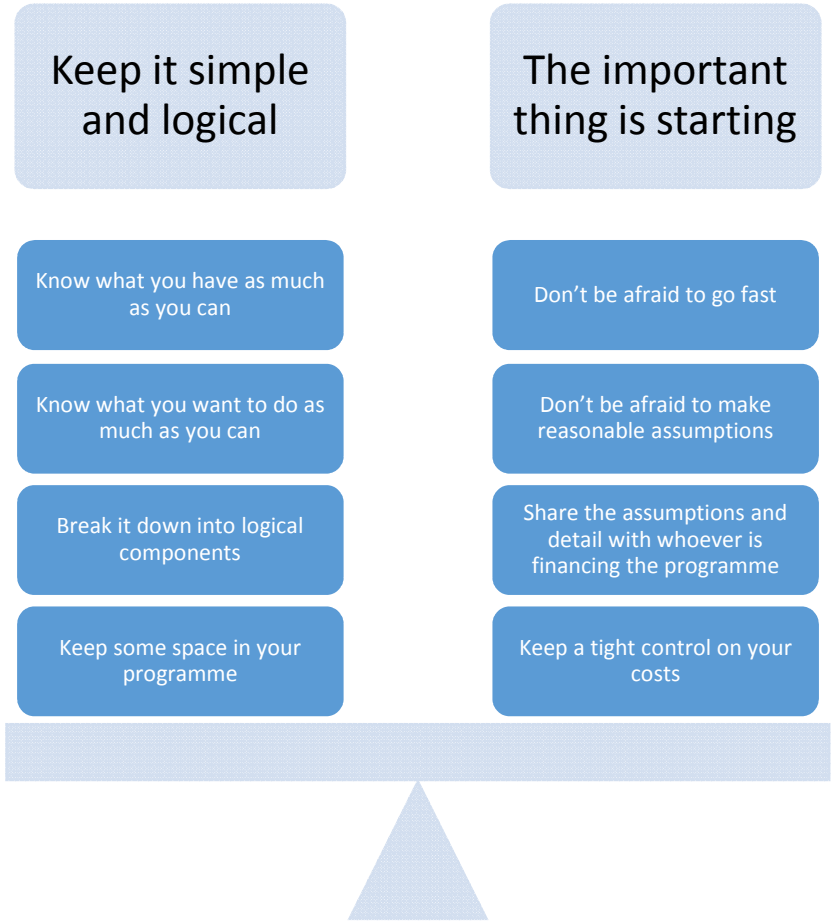
Funding

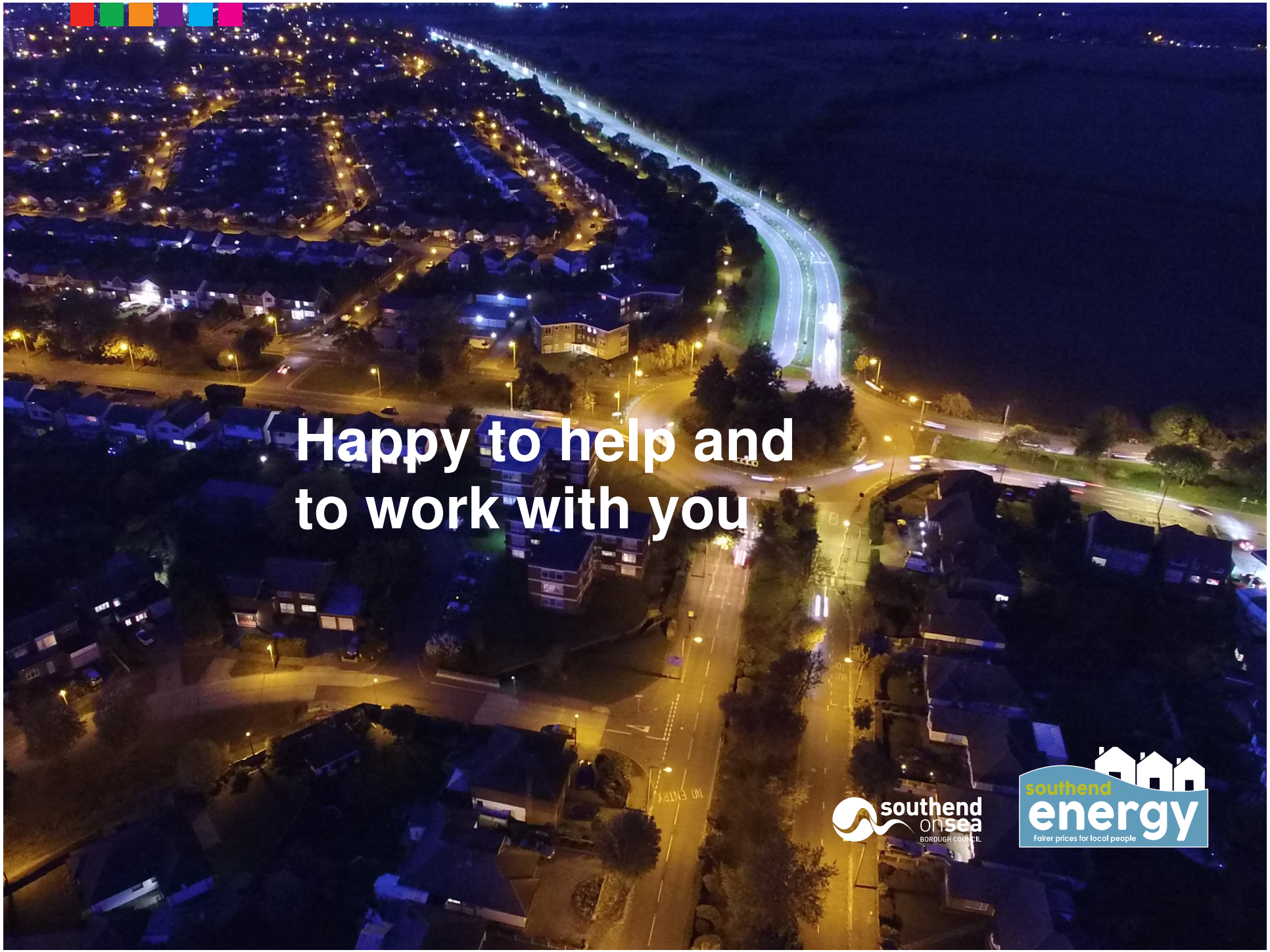
Funding	Interest/ Fees	Capital Repayments	Admin	Risks
Challenge Fund	None	None	Application	Not 100% May not be selected
PWLB Maturity Loan	Interest fixed at drawdown No fees	At end (therefore flexible)	Little or none Usual source	Operational Savings Interest rate
PWLB Reducing Balance Loan	Interest fixed at drawdown No fees	Fixed	Little or none	Operational Savings Interest rate Cashflow negative in early years
GIB	Interest fixed at Financial Close Fees	Shaped	Contract DD Green Audit GIB Approval	Operational Savings
PFI	Benefit transfer in exchange for risk transfer so savings smaller (if any)		Contract	Loss of control
Reserves	Not large enough			
No project	No savings, no benefits Still has to replace columns over time			


LCU
CMS
DCU2-E
Traffic & People Counters
Automatic Meter Reading
Pollution & Temperature Sensors
Waste Sensors
Parking & Place Detection
Gritting
Flood Monitoring
RF mesh technology



A few tips


Keep it simple and logical
The important thing is starting
Know what you have as much as you can
Know what you want to do as much as you can
Break it down into logical components
Keep some space in your programme
Don’t be afraid to go fast
Don’t be afraid to make reasonable assumptions
Share the assumptions and detail with whoever is financing the programme
Keep a tight control on your costs


Happy to help and
to work with you
southend
onsea
BOROUGH COUNCIL
southend
energy
Fairer prices for local people