



Roads\highways, winter maintenance and street lighting:

Sustainability and energy efficiency in highways and street lighting

Paul Binks
Highways Asset Manager,
Lancashire County Council



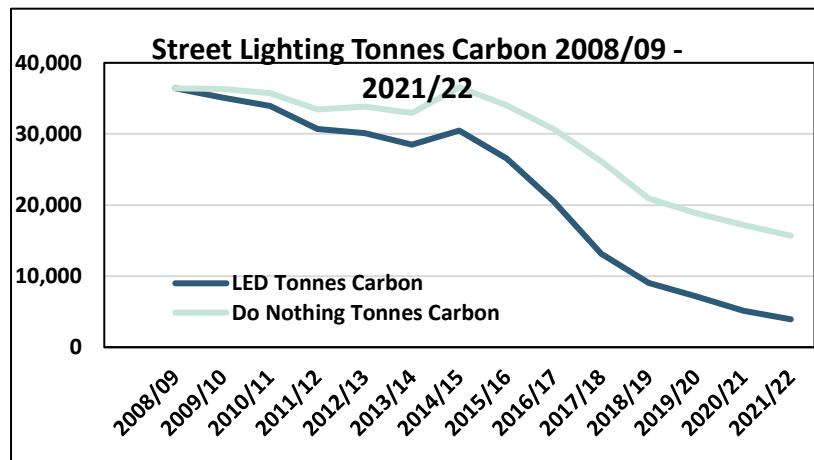
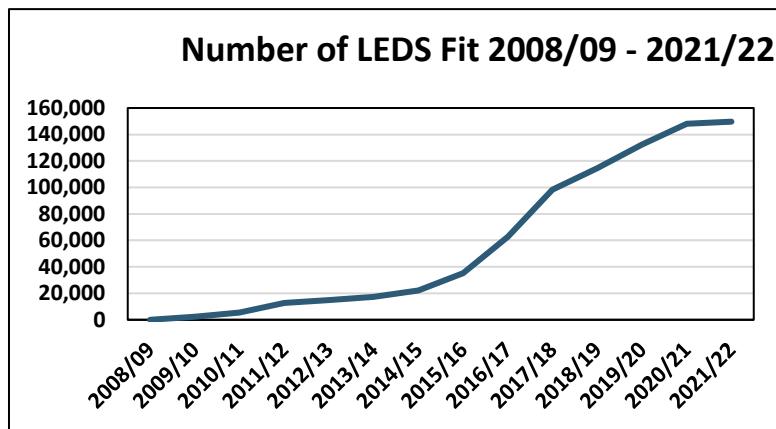
**Data-Driven Decisions: From
Benchmarking to Better Services**



- Street lighting energy:
 - LED installation
 - Dimming
 - LED replacement
 - Lighting up times
- Signals
- Policy change

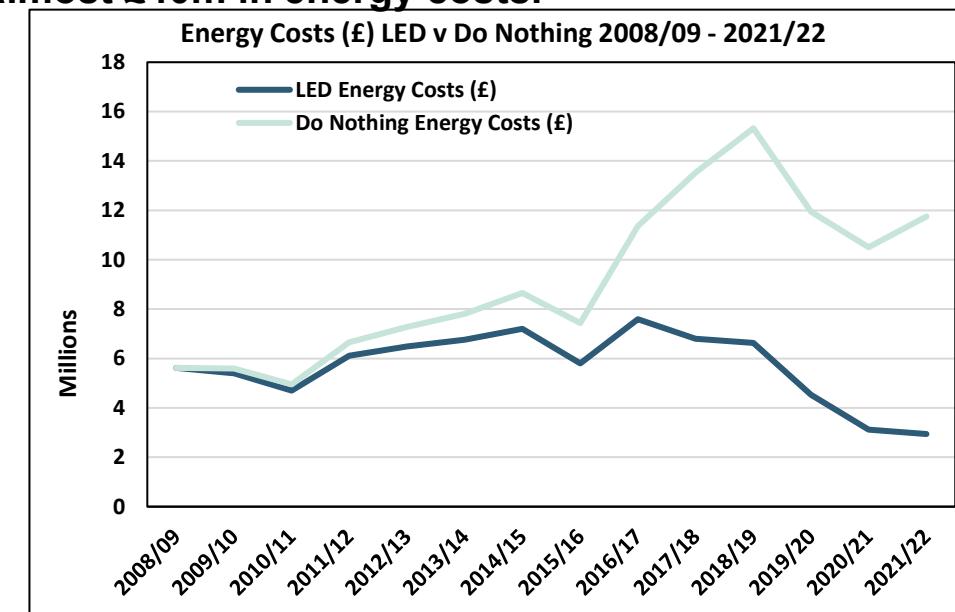
- Highway Maintenance:
 - Coal Tar recycling
 - Estate Road Specification and Palette of Materials



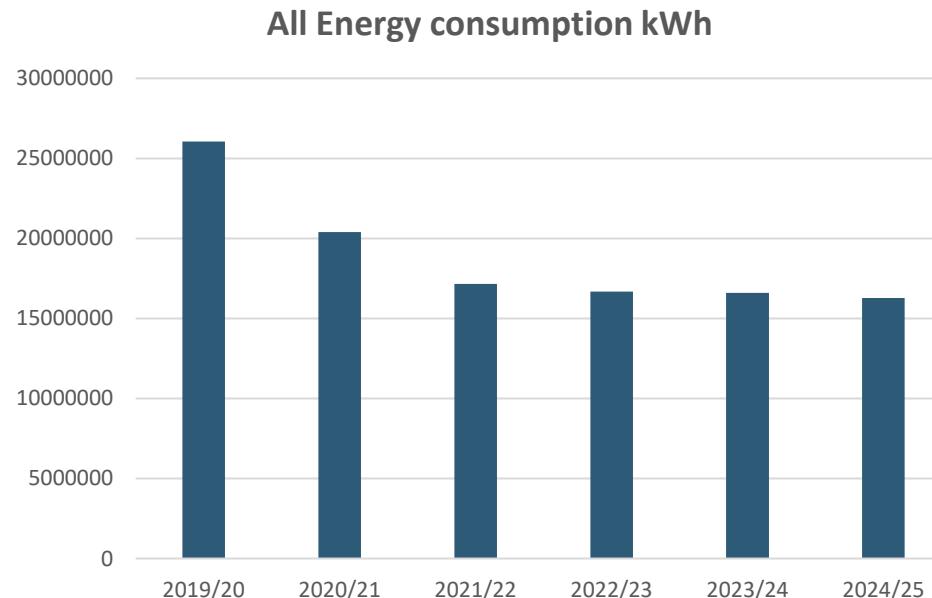


Street Lighting LEDs

Since 2009 to 2022 the county council has cumulatively reduced carbon over 86,400 tonnes, energy by over 48,189MWh, saved almost £40m in energy costs.

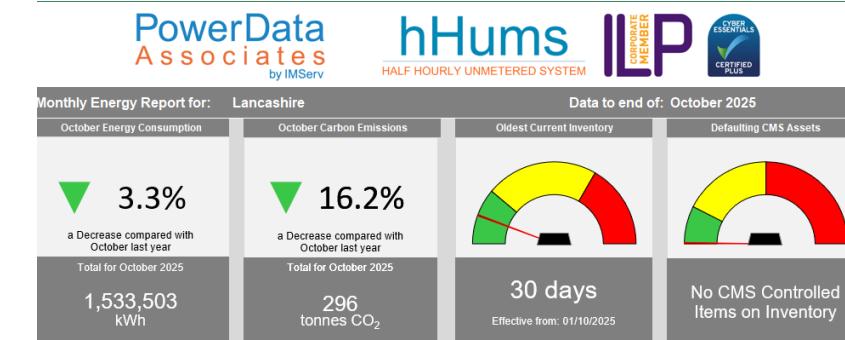


Street Lighting Energy – step change and stretching out savings



How to make further savings:

- Lighting:
 - Dimming
 - LED replacement
 - Lighting up times
- Signals
- Policy change

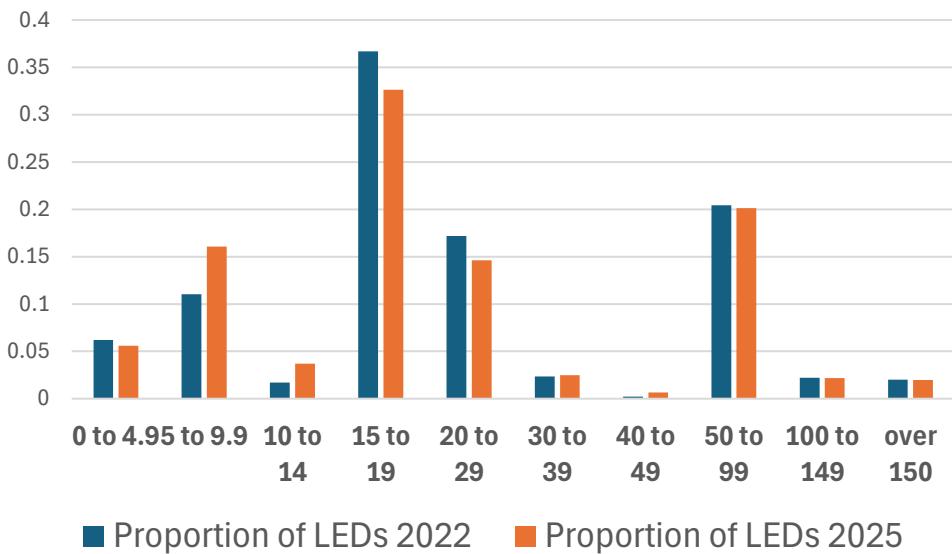


How to make further savings:

- Lighting:
 - Dimming
 - LED replacement
 - Lighting up times

LED wattage band	Number of LED Assets	Proportion of total LEDs	National average*
0 to 4.9	9,129	6%	2%
5 to 9.9	26,208	16%	8%
10 to 14	6,018	4%	10%
15 to 19	53,277	33%	15%
20 to 29	23,871	15%	23%
30 to 39	4,065	2%	12%
40 to 49	1,045	1%	7%
50 to 99	32,873	20%	16%
100 to 149	3,559	2%	5%
over 150	3,195	2%	2%

Proportion of LEDs by wattage- street lighting



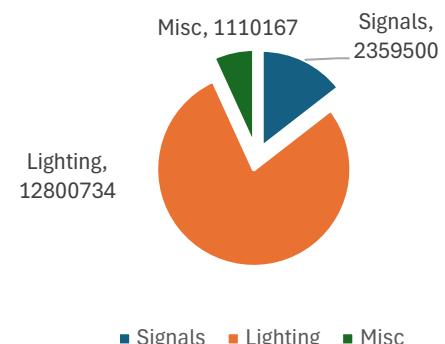
PECU Dailey Burn Hours

Electronic PEC Lux	Number of Elec. PEC Controllers	Proportion of total Elec. PECs	National average*
5/5	-	0%	0%
10/10	56,459	34%	2%
20/20	67,794	41%	20%
35/18	27,174	16%	48%
55/28	12,463	8%	8%
70/35	1,720	1%	20%
Other	-	0%	2%

PECU Type	Units	22 - Oct	23 - Oct	24 - Oct	25 - Oct	26 - Oct	27 - Oct	28 - Oct	29 - Oct	30 - Oct	31 - Oct	Month Average	Month Total
805 - Electronic PEC 10/10	Hours per day	13.1	13.1	13.2	13.2	13.4	13.4	13.4	13.5	13.6	13.6	12.9	321.6
806 - Electronic PEC 20/20	Hours per day	13.3	13.3	13.4	13.4	13.6	13.5	13.6	13.6	13.8	13.8	13.1	326.3
808 - Electronic PEC 35/18	Hours per day	13.3	13.2	13.4	13.4	13.5	13.5	13.6	13.6	13.9	13.7	13.0	326.2
811 - Electronic PEC 55/28	Hours per day	13.4	13.4	13.5	13.5	13.7	13.7	13.7	13.7	14.0	13.9	13.2	329.9

Signals Energy

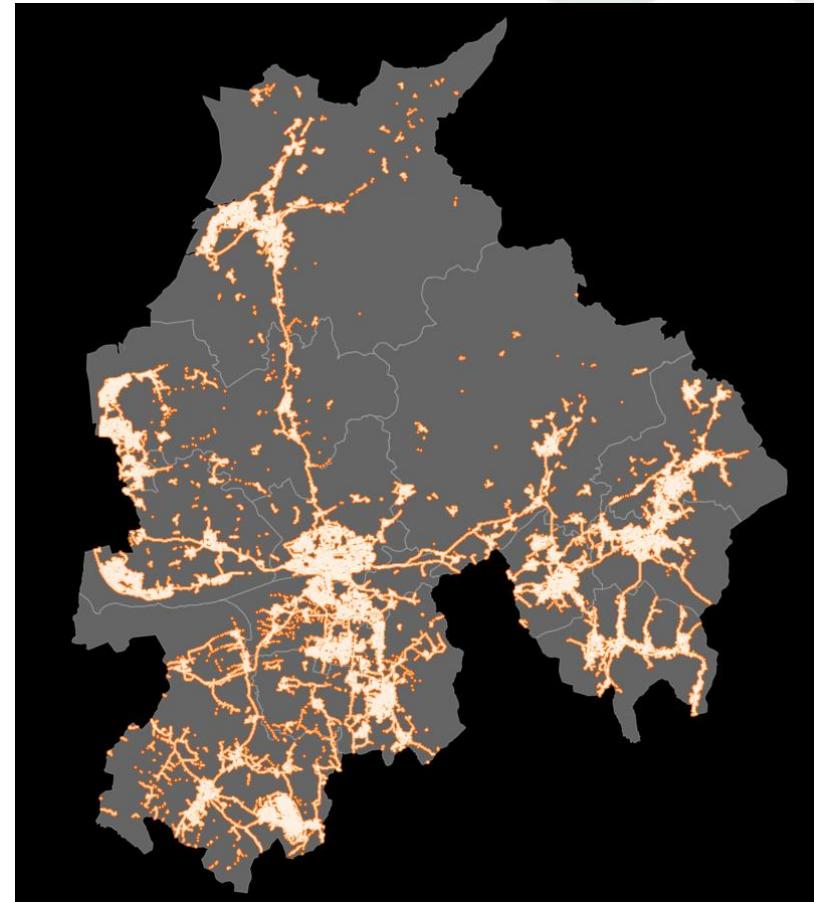
Proportion of energy consumption by asset type, kWh



■ Signals ■ Lighting ■ Misc

Policy saving opportunities:

- Lighting:
 - Pressure - Column replacement
 - Live Labs 2
 - Highways Adoption



Strategy to enhance the treatment Asphalt Waste Containing Coal Tar (AWCCT)

-in line with Environment Agency guidance and regulations

This will :

- Reduced material costs
- Minimal stockpile requirements
- Promote circularity
- Reduced carbon footprint
- Reduced virgin material use
- AWCCT remains within the control of the council and the risks managed

Savings in the region of £300k, based on; 2022/23 programme – rural and urban roads where we have used hot mix binder course, replace with treated recycled AWCCT.

-At an average urban/rural scheme cost of £50k (2022/23) that would give us 6 extra schemes





Estate Road Specification & Palette of Materials



Estate Road Specification

January 2023: Revision 2 May 2024

Highways Asset Management

Palette of Materials
Code of Practice for Developer and Third-Party Works

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