

Live Labs 2

High Visual Efficiency for Low Carbon Lighting

Karl Rourke – Project Manager

Helen Jenkins-Knight – Carbon Lead

Background and Governance

- At this point in time it is impossible to give even an estimated figure of overall carbon reduction for this Live Lab project as there is currently no baseline for existing embedded carbon within the highway visual environment.
- This baseline is a priority task for the Carbon Reduction and Habitat Working Group to determine along with support from our manufacturing partners and academic colleagues.
- All carbon profiling is being overseen by our Carbon and Habitat working group, chaired by Helen Jenkins-Knight, Climate Change Manager at East Riding of Yorkshire Council, reporting to the project manager and project board.

SOBC Statements and Challenges

- Explore Scope 1,2 and 3 where appropriate for 6 key themes
- Understand the whole lifecycle carbon implications of all materials used to ensure carbon is minimized across every aspect of the project
- Establishing a set of metrics for carbon reduction including new and emerging technologies, reduction in lighting, or completely re-profiling the visual environment
- Sector that is unprepared for carbon reduction through materials and not just energy
- Carbon data for materials only just emerging and being developed
- A range of carbon tools, which is the most appropriate?

Our Approach

- Project split into 6 working groups, Carbon and Habitat being one of them
- Other workstreams have taken priority to ensure data is collected and road safety is a priority ready for year 2 interventions
- Begun investigating the 5 key carbon areas of manufacturing, installation, operation, maintenance, end of life and environmental impacts.
- Created supplier working groups for both existing materials and proposed materials
- Engaging with Measure to Improve and Leeds University on a partnership basis to expand on their existing carbon tool into street furniture and not just surfacing
- Our closed loops system means calculations and matrix creation is more straight forward
- Use of government, manufacturer and industry approved data sources to reduce the number of assumptions. Data such as government energy conversion factors and Elexon energy data
- Determining the likely interventions through road safety risk assessment prior to carbon calculation

Timeline

Year 1

- Collection of materials data from manufacturers
- Formalising scope of calculation tool to ensure double reporting does not take place
- Formal engagement and contractual sign off with calculation tool provider

Year 2

- Development of calculation tool
- Partner testing of calculation tool

Year 3

- Application of calculation tool across Live Lab, partners and associate partners
- Peer, industry and stakeholder review of calculation tool
- Final reporting

Anticipated Outcomes

- Factually correct carbon calculation tool for road design and build including whole life impacts
- Minimal assumptions made for ease of use
- Peer and sector approval
- Easily maintained matrix using latest available data
- Evidence of overall carbon reductions through Live Labs application