LIVELABS2 Decarbonising Local Roads

Department for Transport

Decarbonising local roads, how we accelerate change for the benefit of <u>all LAs</u> across the <u>4 nations</u>



May 2025 Giles Perkins, FCILT – Live Labs 2 Programme Director



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https://www.adeptnet.org.uk/livelabs2

LIVELABS2 Decarbonising Local Roads

Department for Transport

A laser sharp focus on measuring carbon benefits



Measuring, capturing and sharing learnings quickly and widely



Accelerating behavioural change across industry



Grasping the challenge

Department for Transport



97% of UK road asset



est. £4bn per annum spend (public & private) est. 1.5 million tonnes CO2e / annum (UK) est. 1.4% of transport carbon footprint (UK) and rising



200+ UK highway authorities



> 80% of LAs and CAs have declared a climate emergency, Paris agreement target of 1.5 degrees exceed in 2024







Using theory of change



Source: NLC SOBC Live Labs 2



GENERAL



GENERAL



Expo March 2025

Department for Transport

"This ain't easy" – lessons learned from decarbonisation projects discussed in Liverpool





Minister praises Live Labs programme ahead of 2025 Expo

by Paul Hotton

Highways News



AIR QUALITY & EMISSIONS, ENVIRONMENT, LOCAL GOVERNMENT, NATIONAL GOVERNMENT, TECHNOLOGY 25. 03. 2025

The Future of Roads Minister Lilian Greenwood has voiced her support for the Live Labs 2 programme looking at ways to decarbonise local roads, telling the Highways Voices podcast there is some "very interesting innovation going on."

Live Labs 2 is a three-year, £30million, UK-wide programme funded by the Department for Transport and managed by The Association of Directors of LIVELABS2 Decarbonising Local Roads

Thank you

Giles Perkins, FCILT Programme Director, Live Labs Head of Profession, Future Mobility, WSP Board member, National Centre for Accessible Transport

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Centre of Excellence

for Decarbonising Roads

SCOTS AGM





Recap of the Centre of Excellence for Decarbonising Roads

4

Delivered by North Lanarkshire Council and Transport for West Midlands, in partnership with Amey and

> Aims to reduce siloed working and encourage low-carbon material adoption



LL2 theme focused on developing a Centre of Excellence for

material decarbonisation of UK local roads

Supported by live testbeds and knowledge bank for













Transport for West Midlands

Which material categories have we focused on?







Completed and Upcoming Trials









Surfacing SuperSite



Why surfacing?

- Our most carbon and cost intensive activity in Highways
- Many LAs use traditional materials that have not significantly changed in 60+ years



Where are the carbon hotspots?

- Production temperature at the plant
- Embodied carbon of materials
- Whole-life and pavement longevity
- Waste, e.g. from planings



How will we approach the trials?

- Side-by-side comparison of leading materials
- Exploring reduction in longevity, embodied carbon and in-situ recycling



What will we achieve?

- Carbon, operational and scalability evaluations of each material
- Experiences of operatives, supply chain and LAs

Transport for West Midlands

COL/





5 comparative low-carbon binders and 1 benchmark

In-situ recycling in binder course

Miles MacAdam junctions

Timeline: July 2025

50mm

100mm







SuperSite Materials

= Ready for adoption

COUNCIL W Transport for West Midlands Amey

= Some barriers to adoption

COLAS

WE OPEN THE WAY

	👮 Туре	Brief Overview	Benefits	🚟 Barriers
	TotalEnergies Biogenic PMB	Polymer-modified binder with biogenic components	 Lowers embodied carbon Whole-life carbon benefits 	Upfront investment in longer- lasting materials
urse	Iterchemica Gipave	Polymeric supermodifier composed of graphene	 Whole-life carbon benefits Improved longevity of pavement by approx. 165% 	Upfront investment in longer- lasting materials
ace Co	Kraft Lignin	Binder extender pellets derived from byproducts of the paper pulping process	 Lowers embodied carbon Potential performance benefits, e.g. resistance to rutting 	 Only compatible with lower-mix temperatures Building awareness in the sector
Surr	Tarmac UltiPave Bio	Biogenic binder	Reduces embodied carbon	Upfront investment in lower- carbon materials
	Eiffage Carbon Light	Plant-based binder	Reduces embodied carbon	Only compatible with lower-mix temperatures



SuperSite Materials



= Ready for adoption

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COLAS

WE OPEN THE WAY

= Some barriers to adoption

		Туре	Brief Overview	Benefits	Barriers
Binder Course	-	Colas Recycol	In-situ recycling with asphalt emulsion	 Reduces virgin aggregates No transport associated with materials and manufacturing Quick to re-open to traffic Lower carbon than hydraulically bound alternative 	 Improving awareness Challenging status quo Supply v demand
		SPL in-situ recycling	In-situ recycling (calcinate clay)	 Reduces virgin aggregates Reduces transport carbon of materials Quick to re-open to traffic Higher levels of stiffness achievable with hydraulically bound alternative 	I i Improving awareness and education on suitability of sites



So why aren't we using these materials already?

The key barriers to material decarbonisation need addressing too:



How can you get involved?



Sign-up to our quarterly newsletter and subscribe to our LinkedIn page



Share your case studies if you're from a local authority

Share your innovation directly to our Log, to be added to our knowledge bank once launched

Visit our website & join our decarbonisation journey



www.decarbonisingroads.co.uk





