

Net Zero Living: Meet The Innovator - Webinar Series

Webinar 2: Decarbonisation of Transport

17th March 2025





Our Purpose & Vision

We are part of Innovate UK, the UK's innovation agency.

We create diverse connections to drive positive change.

To establish a network of innovators so powerful its ideas will change the world.



Innovate
UK

Business
Connect

Our Network



46,229
Unique
Organisations



72%
Small

15%
Medium

13%
Large



335,478
innovators



**Every university
in the UK**



**Innovate
UK**

**Business
Connect**

Innovate UK Net Zero Living Programme



A £60 million, three-year programme that aims to help places and businesses across the UK to accelerate the delivery of the transition to net zero.

Two core focus areas

Providing support to 52 local authorities, their partners and communities to overcome non-technical systemic barriers to the scaling and adoption of net zero solutions.

Supporting businesses to better understand and respond to the needs, opportunities and barriers preventing the large-scale roll out of net zero solutions.



<https://iuk-business-connect.org.uk/programme/net-zero-living/>



Innovate
UK

Business
Connect



Pooya Kamvari
HomeRun



Tom Pigden
Optrak



David Smith
CalCommuter



Innovate
UK

Business
Connect



HomeRun

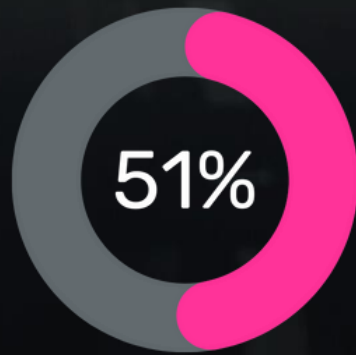
POWERED BY **STEP AI**

Meet the Innovator March 2025

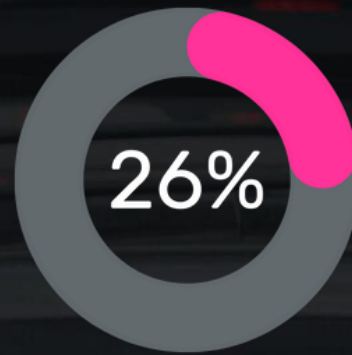
Transforming the school run through innovation



The school run is one of the **biggest** issues across the UK



Morning rush hour trips are to education establishments



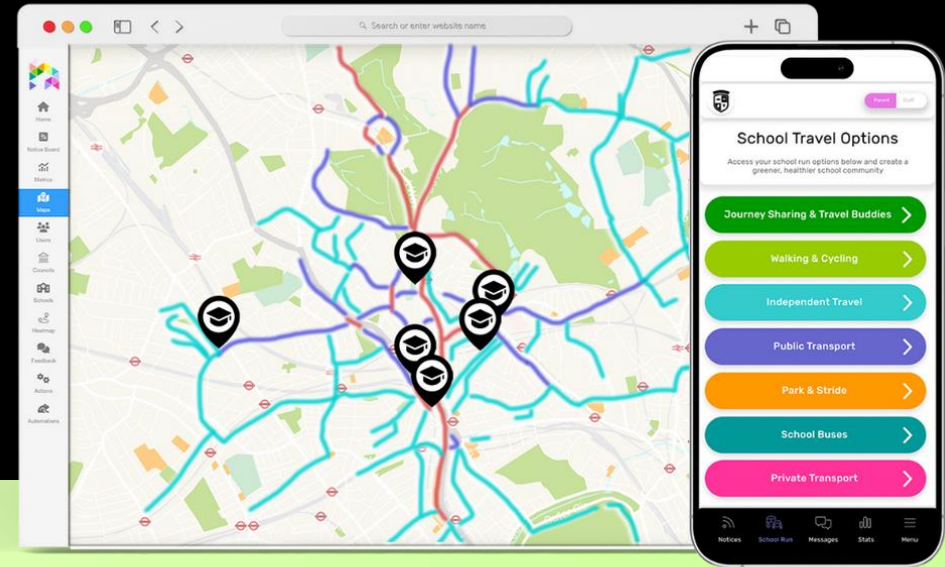
CO2 emissions across the UK from Road Transport

5 ×

Children exposed to 5 times more air pollution on the school run

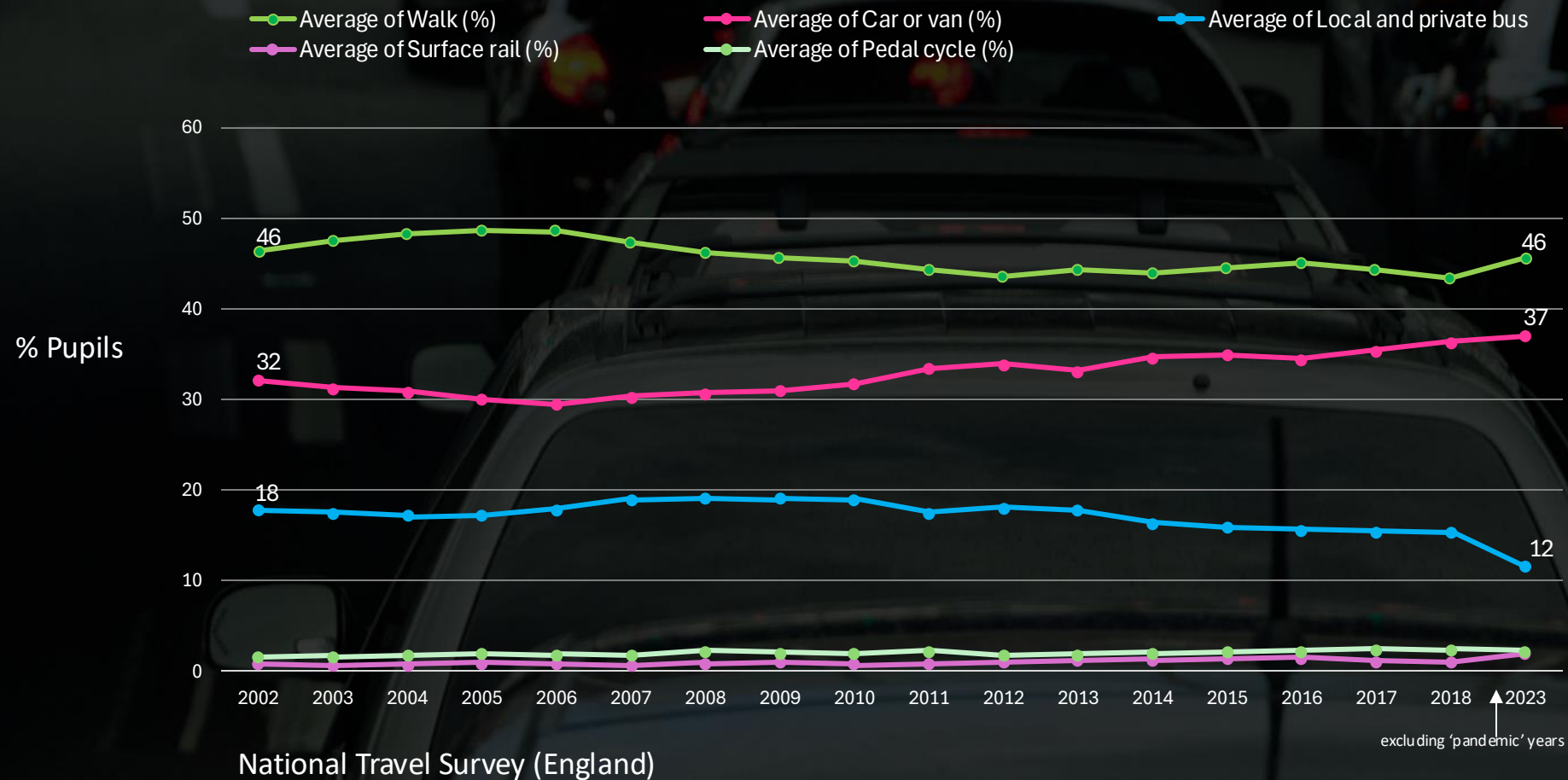
Our History > HomeRun App

HomeRun App is a proven solution working with 150+ UK schools and local authorities, to increase active travel, and reduce road traffic and emissions generated by the school run.



But it's not enough...

The school run is getting worse!



What is blocking the UK from improving the school run and achieving value for money?



95%

The Underlying Problem

of schools do not have up-to-date and actionable travel data.

CIRQUE DU SOLEIL.



In partnership with



Innovate UK

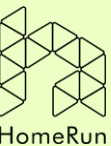
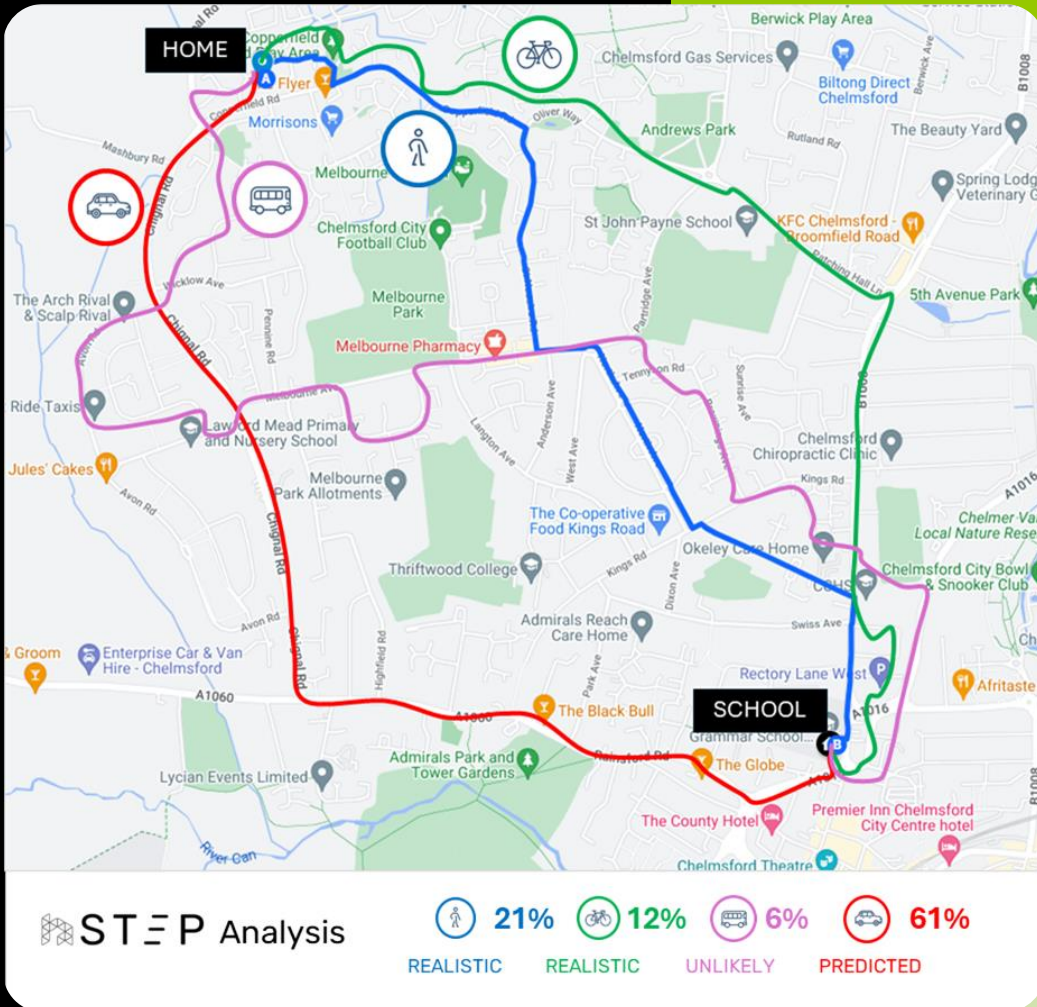


The solution: HomeRun STEP AI

Leverages **Machine Learning** alongside deep behavioral analysis across **100,000** unique UK school journeys, to accurately predict school travel impact and identify **high value** for money sustainable travel interventions.

Key benefits:

- ✓ **10 times** value for money with existing budgets.
- ✓ **Helps mitigate impact** of accelerated homebuilding targets.
- ✓ **Reduces health inequalities** by targeting need.



The power of HomeRun

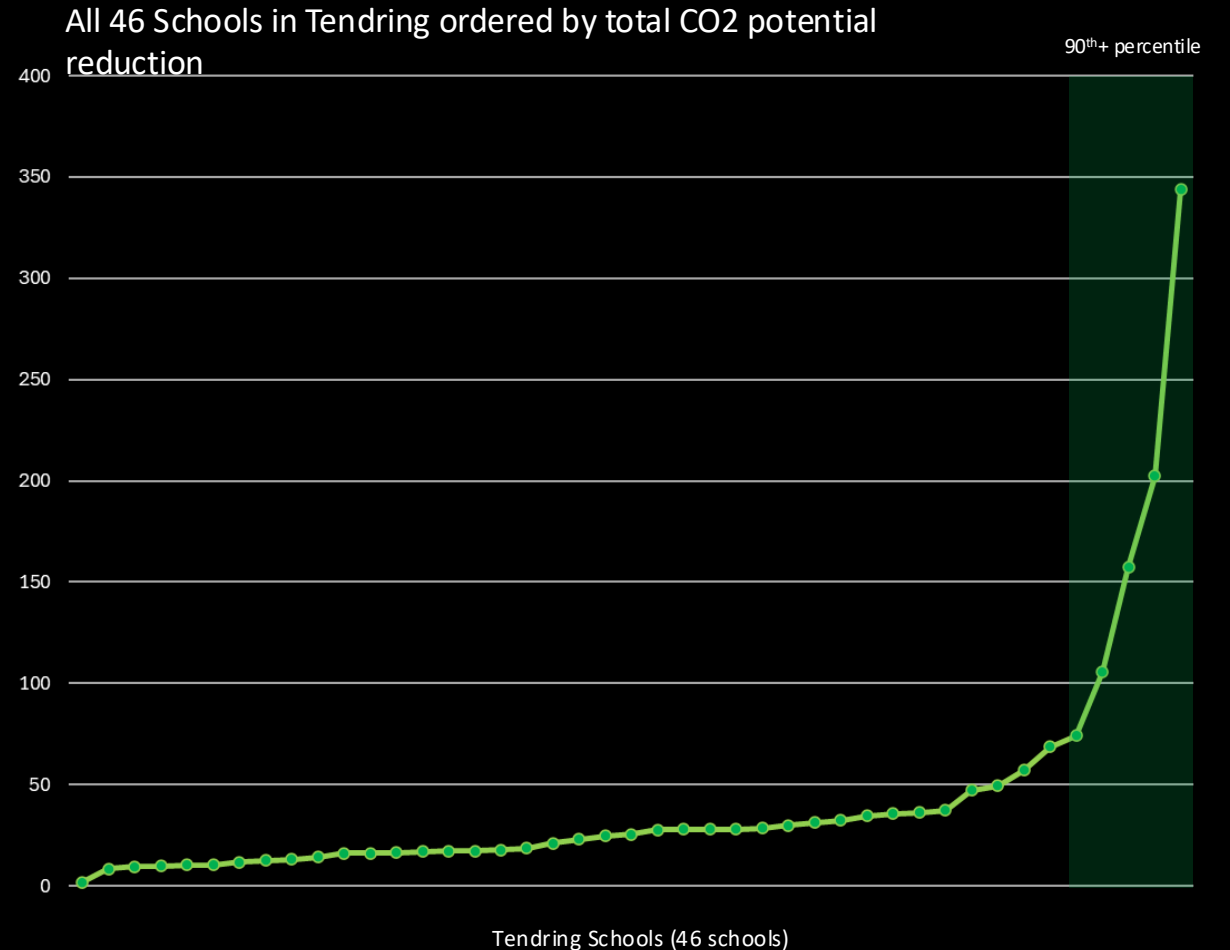
STEP AI:

10X

Value for money

Through accurately targeting sustainable and active transport solutions to maximise impact.

Case study > Tendring (Essex)





HomeRun

STEP

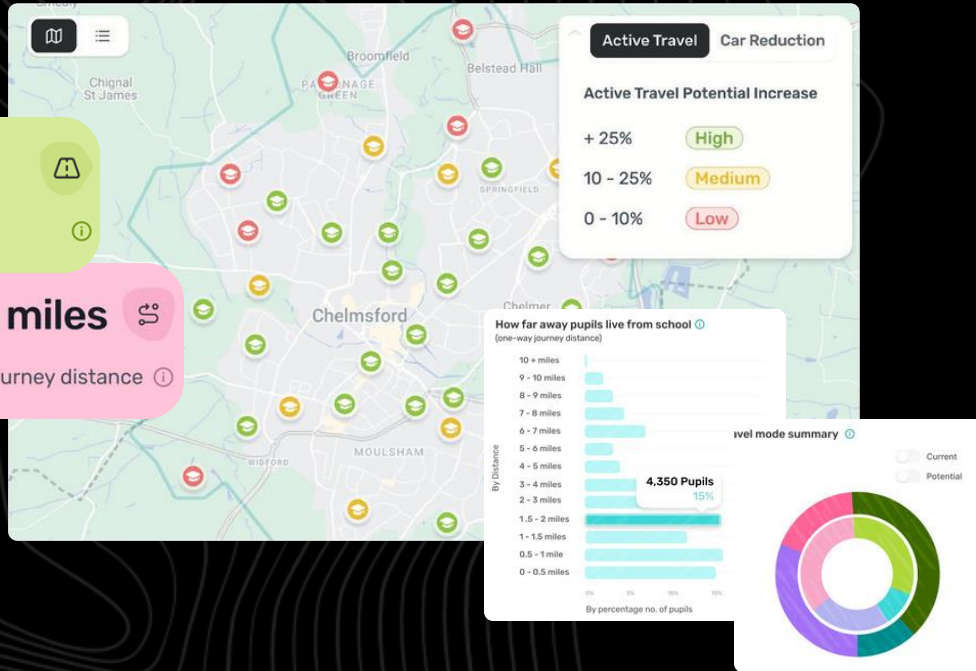
School Travel Evaluation Platform

59%

Rural journeys

2.4 miles

Avg. journey distance



Recommendations:

1. Focus resources on **high impact**, targeted, and quantified initiatives.
2. Ensure solutions are designed for **'the majority'** and not the extremes.
3. Embrace disruptive **innovation** and new ideas



HomeRun

Contact Us

> [Info@homerun-app.com](mailto:info@homerun-app.com)

> www.homerun-app.com



Decarbonisation of Transport – Meet the Innovator

OPTRAK
VEHICLE ROUTING SOFTWARE

TRAK
VEHICLE ROUTING SOFTWARE

OPTRAK OVERVIEW

Helping clients save distribution costs, improve routing efficiency and drive customer service improvements

Operations



Specialising in routing innovation since 1988



Customer deployments across UK, US and Europe



Significant experience in Local authority decarbonisation and waste

Accolades



2023 Transport Awards for Logistics Software



Recipient of four Innovate UK innovation grants between 2020-24 to develop new optimisation solutions



Research led development in partnership with UK universities

Decarbonisation Projects



INNOVATE UK TDD PROJECT

9 months (July 2024 – March 2025)

Feasibility study + integrated vehicle trial looking at eRCV (electric refuse collection vehicle) adoption in rural local authorities.

Primary Partners



Supporting Organisations



SOLVING THE DOMESTIC WASTE CHALLENGE

Status Quo

- Static round construction using basic arc routing – councils and 3rd parties will plan out a set of rounds and make infrequent/occasional changes.
- These rounds/strategies don't take into account the requirements of EVs – organisations will strategically build trips without recognising how range limitation and charger location will play a part.
 - Additionally significant for rural operations – much easier to run eRCVs when your routes are <20km.

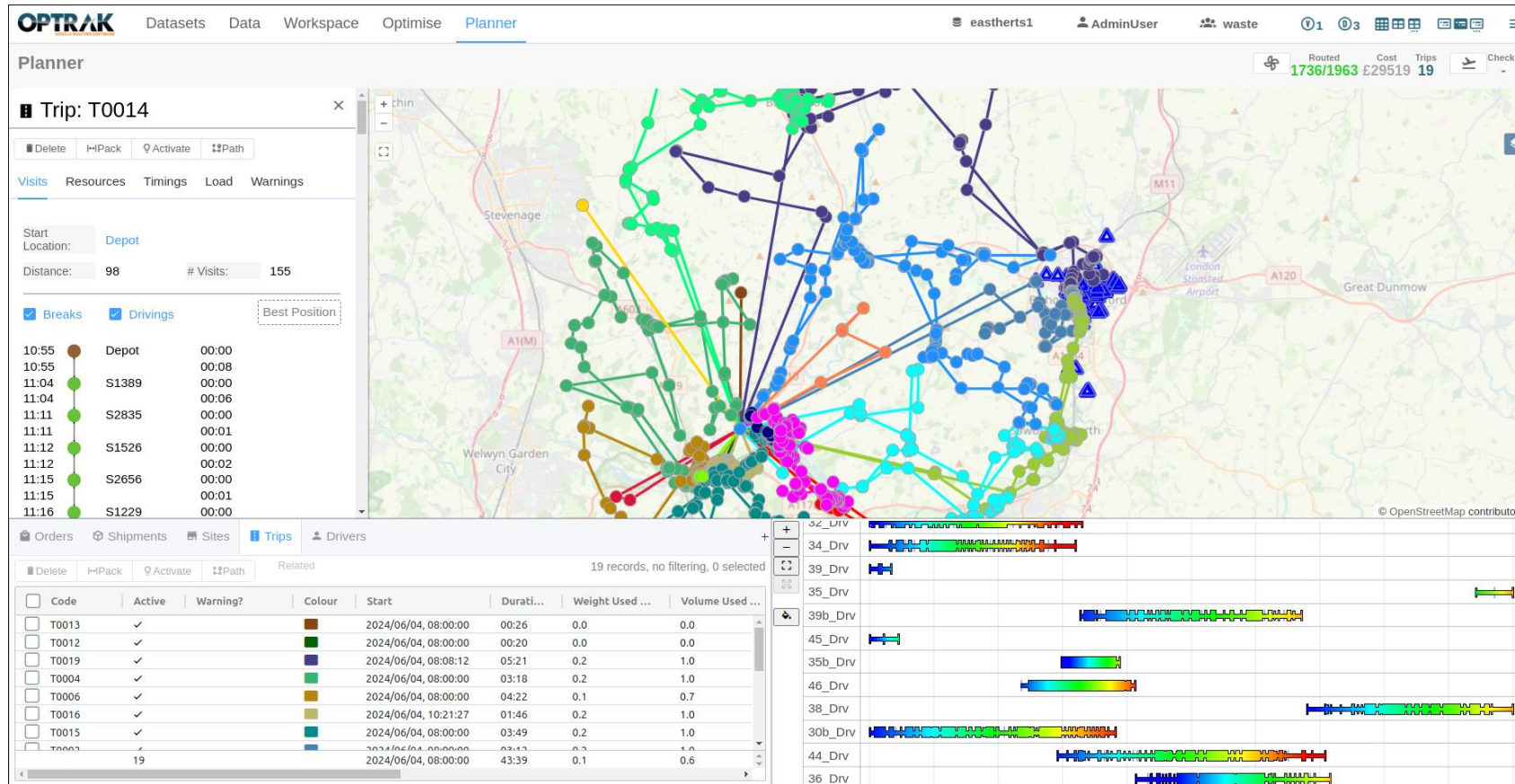
Opportunity and Challenge

- There are different opportunities with EV vehicles and charging infrastructure – resource sharing opportunities across councils could be evaluated.
 - New eRCVs, better batteries – what should my eRCV configurations be?
 - Evolution of trucks for curb-side sortation.
 - New recycling directives.
- Which of my routes just aren't feasible? Using this tool to identify to work out CO2 mitigation strategy.

How?

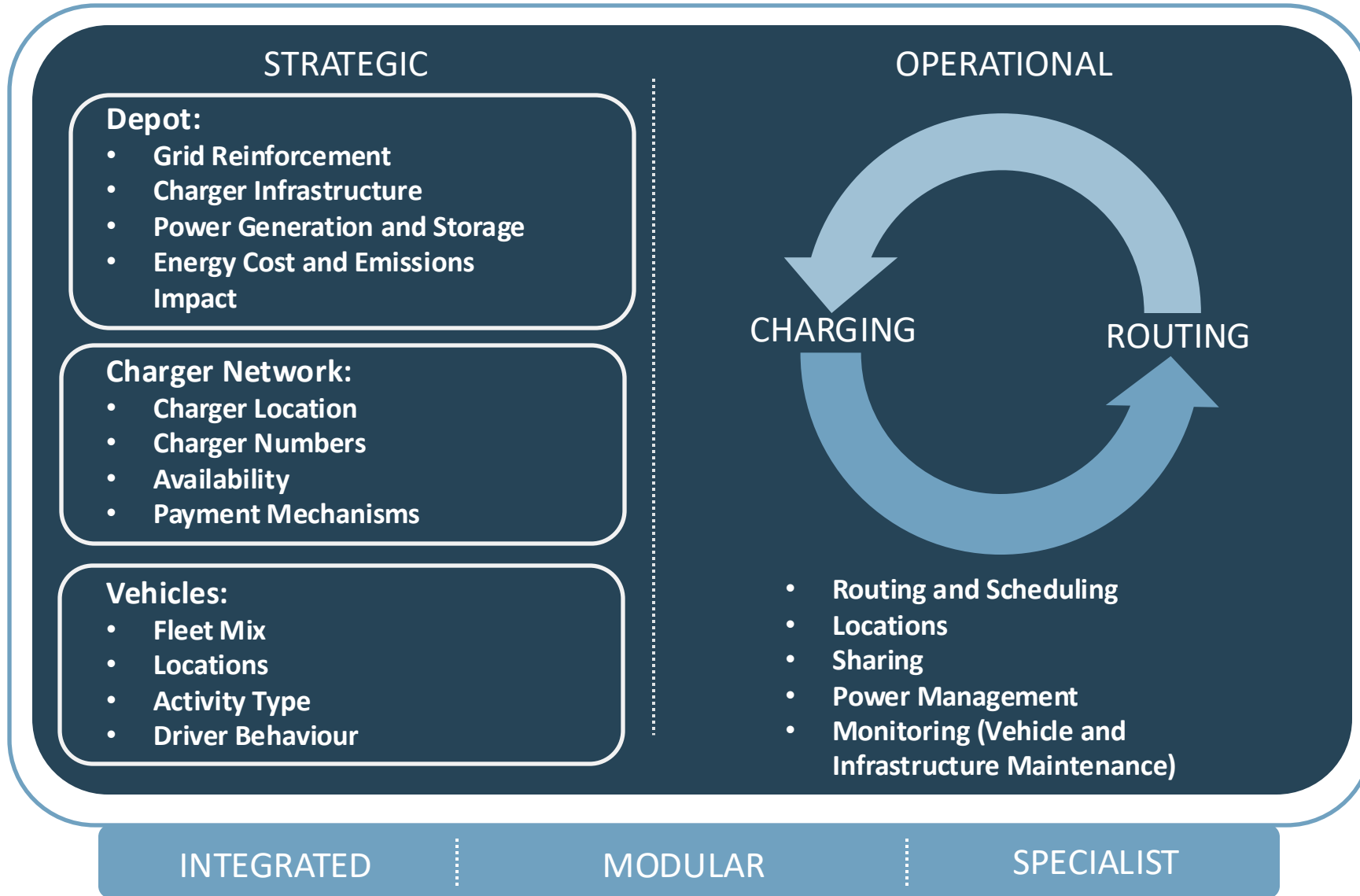
- Modelling eRCV energy consumption to plan across the route – combining with real-world tracking data to refine profiles for planning.
- Novel route planning heuristics – taking the latest research into arc route construction (the mechanism for defining roads that vehicles travel along) and refining into a calculable space to create serviceable routes.

WHAT WE'RE DEVELOPING



- Strategic toolset allowing optimisation to be run on historical council rounds to identify how an eRCV could do them and replan with EV robustness if needed.
- Offer strategic balance analysis on multiple reconfigurations (depot/vehicle/round/frequency) with comparisons
- Interface with current waste planning tools – would take existing route outputs, remodel and create robust trips that could be reinternalized.

FITTING IT INTO A WIDER LANDSCAPE



TAKING THIS FORWARD

- The current project ends this month – key outputs include a demonstrator to the DfT and participating local authority the solution to this point.
- We're looking for more local authority partners – the solution to this point needs refining to go into council hands and we're looking to work more broadly with interested local authorities – getting in more actual routes councils are running is extremely valuable.
- We can connect you with vehicle manufacturers for trials of eRCVs – combining your running of the trucks to evaluate real-world considerations with vehicle telemetry data to refine the heuristics.
- If you already have eRCVs running – we'd love to partner too!
- The goal is to create a broad model for how councils can use this system as part of planning to create a phased plan for EV transitioning – change management analysis and data policies will also be considered.

If you are interested, please get in touch!



CalCommuter

Meet the Innovator

Decarbonisation of transport

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Background

What is CalCommuter?

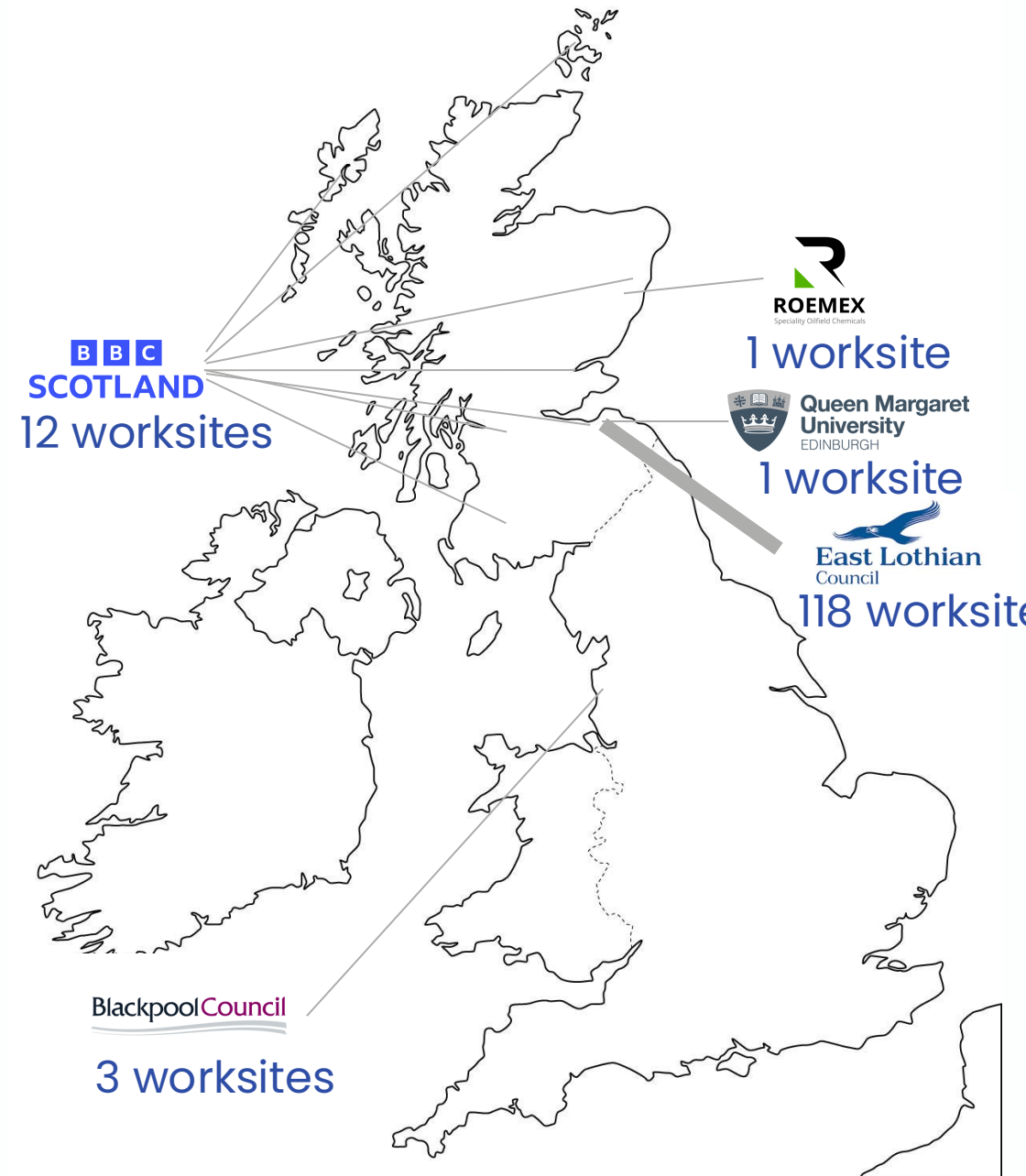
an intelligent staff commute survey platform that calculates and compares the cost, duration, and emissions of individual employee's current commute with all viable travel alternatives

Helps organisations understand, report on and act on their emissions from **commuting and home working** (Scope 3).

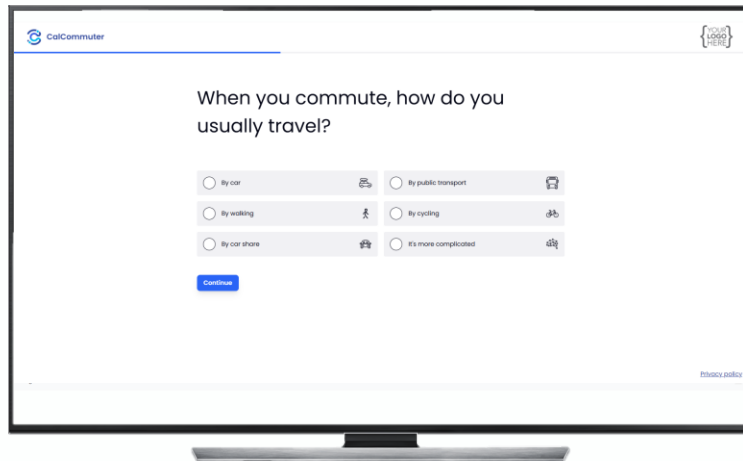
Innovate UK funded:

the 'Fast Start' project that developed the CalCommuter prototype

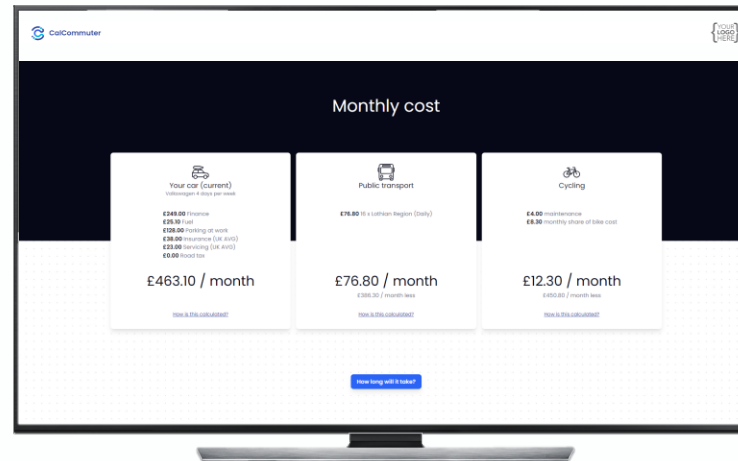
The Commute 2 Net Zero project which developed the MVP and piloted the platform in multiple orgs



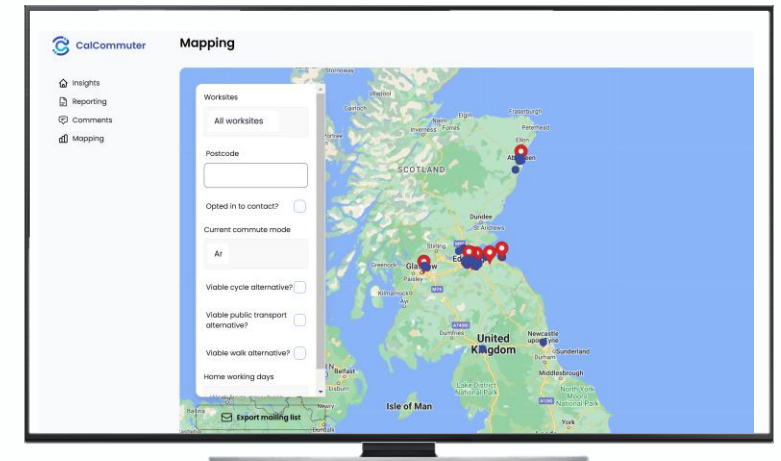
How does it work?



Employees invited to submit their commute requirements via a short survey



Personalised commute plans emailed to staff comparing cost, duration and emissions of options and linking them to existing resources



Employers get insights into commuting patterns, emissions hotspots, opportunities for behaviour change, and their Scope 3 emissions report.



Public and private sector case studies



C2NZ Project



Scotland



England





www.calcommuter.com



David Smith

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