



Innovate UK,
BBSRC and
EPSRC

CO₂CO

A Greener Future for the Road Construction Industry

CO₂CO is combating climate change by developing sustainable materials for the transport, construction, and energy sectors. It specialises in the thermal transformation of algae.

Here, founder and CEO, Philip Slaughter, shares how a SusBioMM-funded feasibility study brought together experts from UK universities, businesses and the road construction industry to create a carbon-negative and economically-viable binder for asphalt.

“It wasn’t just research for the sake of research, or innovation for the sake of innovation. We could see a roadmap to commercialisation, a pathway to bring to reality what we were trying to do: make a big impact on decarbonising the transportation sector.”

The Shift to a Sustainable Alternative to Bitumen

Derived from fossil fuels, petroleum-based bitumen is a significant contributor to the emissions causing climate change.

Public demand for eco-friendly alternatives, stricter environmental regulations, advancements in bio-based materials, and economic benefits are driving the shift to sustainable solutions.

A key challenge facing the road construction industry is finding the sweet spot where supply and demand meets the right price to address environmental impact.

Bio-bitumen offers a sustainable solution without compromising quality or performance. It also decouples the road industry from geopolitically-controlled sources of crude oil, potential supply constraints and price.



From Concept to Commercialisation

When the project call opened, a group of experts from CO2CO and other UK businesses, universities and industry came together. After exploring a wealth of ideas, they hit upon the potential of bio-bitumen.

As well as providing the impetus for the product concept, Philip says the funding was instrumental in accelerating the product's pathway to commercialisation by facilitating R&D, feasibility studies and market assessments, and establishing partnerships with academic and industry experts.

“Innovate UK provides the scaffolding so people who are tenacious and have networks and systems based on sound ideas and a clear idea of commercialisation, can pull themselves up to actually make a difference.”

What's next?

As this technology is still in developmental stages, its full impact isn't yet clear. However, the potential benefits are significant.

Bio-bitumen can reduce carbon emissions, waste, and costs. It can lead to new sales, exports, and the development of related products. It may also attract new investment, create jobs, influence sustainable practices and policies, and raise awareness of eco-friendly alternatives for the green technology sector.

The team is now in discussion with other catapults about scaling and engaging with stakeholders in other industries about potential applications in the UK and overseas. They are part of a trade mission to the US which could open doors to new collaborations and investment.

Overall, this funding paved the way to strategic collaborations, knowledge exchange, and market opportunities, significantly accelerating CO2CO's journey towards bringing sustainable bio-bitumen to the market.

[Find out more about the Sustainable Bio-based Materials and Manufacture \(SusBioMM\) Programme](#)

What would Philip say to other businesses applying for funding?

Philip attributes their success to the founding team's depth of experience, along with their diversity of thought and background, combined with the expertise of their partners.

“The collaboration that can come from diversity is electrifying... Make sure you've got a network of friends, collaborators and colleagues – including Innovate UK and industry partners. Communication, collaboration, and innovation, backed by deep science built on the foundations of solid commercial roadmaps, are the key to success.”