

Clean Futures Accelerator 2025

Challenge Specification

1. Overview

The West Midlands region is recognised as a critical hub for advanced manufacturing and a central driving force behind the UK's 'Green Industrial Revolution'. The Clean Futures programme is strategically designed to support regional innovators within the transport and manufacturing sectors in their transition towards sustainable clean technologies, thereby stimulating significant economic growth through an accelerated route to market. The programme aims to attract ambitious, high-growth Small and Medium-sized Enterprises (SMEs) operating within the West Midlands, encompassing both established entities within existing supply chains and agile businesses seeking to diversify into new clean technology domains. The initiative will empower selected SMEs to rigorously develop, thoroughly test, and effectively scale their novel clean technology transport solutions, while concurrently showcasing their unique value proposition to key Tier 1 suppliers and Original Equipment Manufacturers (OEMs).

The Clean Futures programme has a demonstrable track record of impactful outcomes. Following participation in previous cohorts, SMEs have collectively secured over £100 million in new contracts and attracted over £20 million in private investment. Furthermore, participating organisations have developed 14 new patents, highlighting the innovative nature of the solutions supported by the programme.

Now entering its third year, building upon the success of two previous cohorts comprising a total of 40 SMEs, the Clean Futures programme will offer a further **10 carefully selected SMEs** an opportunity to participate in a focused, 6-month, challenge-led accelerator initiative. This year's programme is an undertaking led by Connected Places Catapult in collaboration with Coventry University leveraging their combined expertise, extensive industry networks, and advanced facilities to provide comprehensive support.

Selected SMEs will have the opportunity to secure a share of a dedicated **£300,000 funding pool**, allocated to the rigorous testing and validation of their technological solutions through defined trial projects. Applicants can apply for one of two distinct funding pathways:

- Up to **£25,000** in funding to support a focused **standard trial**, designed to validate core technological functionalities and initial market assumptions.
- Up to **£50,000** in funding for a more **comprehensive trial**, which builds upon a standard trial with an expanded scope to address more complex integration challenges or broader market validation activities.

Eligibility is limited to one funding pathway per SME. The allocated funding is intended to directly offset costs associated with the planned trial activities and will require a commensurate match in the form of in-kind contributions from the participating organisation.

The core challenges addressed by this year's accelerator programme are strategically focused on catalysing significant innovation within the critical transport manufacturing sectors, as well as their interconnected supply chains, within the context of accelerating the adoption and integration of advanced clean technology solutions. Participating SMEs will benefit from access to tailored technical support, dedicated commercial support, valuable networking opportunities, and high-profile showcasing events.

Organisations interested in learning more about this opportunity are encouraged to attend the **Clean Futures Application Support webinar on the 3rd June** to address any queries regarding the application process or the programme. An in-person open day will also be held on the **19th June** allowing the opportunity to engage with Coventry University on their facilities and any questions in relation to the programme.

2. Partners

The programme is a collaborative project bringing together Connected Places Catapult and Coventry University as well as several partners from the wider ecosystem.

The Connected Places Catapult

Connected Places Catapult is the UK's innovation accelerator for cities, transport, and place leadership. They provide impartial 'innovation as a service' for public bodies, businesses, and infrastructure providers to catalyse step-change improvements in the way people live, work and travel. The Catapult connects businesses and public sector leaders to cutting-edge research to spark innovation and grow new markets and run technology demonstrators and SME accelerators to scale new solutions that drive growth, spread prosperity, and reduce carbon emissions.

Coventry University

Coventry University is a forward-looking, modern university who provides high-quality education with a focus on applied research. The Clean Futures programme provides SMEs with access to the facilities, skills and experience of the Institute for Advanced Manufacturing and Engineering (AME).

AME, the UK's first 'Faculty on the Factory Floor', supports businesses and education using a combination of academia and industry and innovative research in a factory setting, to ensure that participants are industry-ready and future proofed in latest manufacturing

technologies; and support businesses in commercialising research to meet industrial challenges.

3. Challenges

The Clean Futures Accelerator invites applications for innovative solutions that tackle four specific challenge areas, in addition to an open challenge. To be considered, your technology, product, or service should address at least one of the challenge themes below. These challenges are aligned with the strategic ambitions of the West Midlands to protect and grow its economy and businesses, decarbonise key sectors, particularly manufacturing and transport, and to accelerate progress toward a Net Zero economy.

Challenge 1 - Net Zero Manufacturing

We are seeking innovations that reduce industrial emissions through the application of Manufacturing 4.0 technologies—such as digital tools, automation, data-driven optimisation, and process innovation. Around one-third of the West Midlands’ regional emissions stem from industrial activity—particularly concentrated in areas like the Black Country.

This challenge focuses on accelerating the adoption of advanced manufacturing solutions that enable more efficient, low-carbon production. Innovations that reduce the embedded carbon in manufactured products—delivering the same or improved performance with lower carbon intensity—are especially encouraged.

Solutions may come from manufacturers directly, or from technology providers and consultancies working with delivery partners to pilot and scale across industry. Example innovation areas include:

- Add-on technologies or digital twins that enhance manufacturing or process efficiency or reduce energy use
- Process optimisation to reduce emissions or waste, for example in industrial furnaces or during welding
- System integration innovations, enhancing integration between legacy and new systems
- Tools that support better data collection and monitoring of industrial emissions

- Products or services that lower embedded carbon in manufacturing, including lean manufacturing techniques, waste reduction strategies and sourcing low carbon materials
- Consultancy-led innovations that can be deployed across multiple manufacturers
- Digital tools such as simulation tools, IoT and AI/ML applied to reducing emissions in manufacturing or lifecycle assessment tools
- Any other innovation which addresses the challenge

Challenge 2 - Future Fuels and aterials

This challenge seeks innovative fuel and material technologies that support decarbonisation across the manufacturing and transport sectors, excluding battery-based solutions. We are looking for SMEs that are developing or deploying:

- Clean fuels such as hydrogen, synthetic fuels, organic fuels, or biomasses, especially for applications where electrification is not yet viable (e.g. high-temperature industrial processes).
- Low-carbon material innovations that reduce emissions associated with the sourcing, processing, or use of traditionally high-emission industrial materials such as steel, cement, plastics, or aluminium.

Solutions may address any part of the value chain—from fuel production and distribution, to material sourcing, recycling, or substitution, and through to end-use applications. The common requirement is that each innovation should offer a clear and measurable reduction in emissions, either by displacing fossil fuels or reducing the embedded carbon in manufactured products.

We encourage applications from both technology developers and consultancies, provided that consultancy-led applications are supported by a delivery partner within a manufacturing or industrial setting to test and validate the solution.

Example innovation areas include:

- Clean fuel production methods using low-emission processes or renewable feedstocks
- Use of low-carbon fuels in industrial operations (e.g., hydrogen-powered furnaces or biomass boilers)
- Local or distributed supply chains to increase availability and affordability of alternative fuels or materials, including microgeneration networks and hub and spoke solutions

- Material innovations that reduce embedded carbon, such as recycled inputs, alternative binders, or remanufactured components
- Fuel delivery or storage innovations that reduce waste, improve efficiency, or lower costs
- Use of alternative clean fuels in industrial settings, logistics, or transport manufacturing, for example applied to furnaces or boilers
- Infrastructure to support alternative fuel use in areas where batteries are not practical
- Any other innovation which addresses the challenge

Challenge 3 – Clean energy conversion

This challenge focuses on utilising surplus energy generated during peak generation time by enabling its conversion and effective use. Clean energy sources like solar and wind are increasingly central to our energy mix, yet often produce surplus power that cannot be fed back into the grid at high volumes or at the right times. As a result, valuable clean energy is lost – up to £1 billion worth per year and growing — and fossil fuel sources remain in use to meet demand at other times.

We are inviting SMEs with solutions that capture, convert, and put this excess energy to use in manufacturing or transport contexts. Innovations could involve the development or deployment of clean energy vectors or other technologies that help reduce dependency on fossil fuels and maximise the value of clean power generation. **Battery-based solutions are not in scope.**

Applicants should state a realistic target for energy retention or utilisation as part of their proposal.

Example innovation areas include:

- Converting excess solar or wind power into alternative energy carriers such as hydrogen or heat
- On-site or near-site systems that put surplus clean energy to work in manufacturing operations
- Solutions that support grid balancing by shifting energy use to peak generation times
- Thermal or mechanical energy storage methods that capture or reuse surplus energy

- Distributed energy management systems for industrial clusters, production lines or warehousing operations
- Any other innovation which addresses the challenge

Challenge 4 – Circular economy

This challenge calls for innovations that reduce waste and increase the reuse or repurposing of materials in manufacturing processes. We are looking for SMEs that can improve circularity at any point in the lifecycle — from product design and materials selection to the recovery and reuse of post-use or stockpiled materials.

The West Midlands has a strong industrial base, and this presents a major opportunity to reduce embodied carbon and avoid unnecessary disposal of valuable resources. Applicants should show how their solution can reduce environmental impact while offering a compelling cost efficiency or value case to industry stakeholders.

Example innovation areas include:

- Solutions that enable the reuse or recycling of scrapped parts, materials or components
- New product or material designs that extend life, simplify disassembly, or support reusability, including modular designs and easy-to-recycle components
- Recovery of high-impact or high-value materials from stockpiles, waste streams or industrial byproducts
- Circular material alternatives that can substitute for virgin inputs in vehicle assembly, automotive components or other transport-related manufacturing
- Tools or technologies to improve traceability and optimize reuse value across supply chains
- Lifecycle management tools, such as digital twins, IoT-enabled systems, and data analytics platforms, that drive efficiency, material reuse, and support sustainable practices across the entire product lifecycle.
- Any other innovation which addresses the challenge

Open Challenge

In addition to the four core challenge areas, we welcome applications that broadly support the aims of the Clean Futures Accelerator and the wider transition to a Net Zero economy.

The Open Challenge offers flexibility for SMEs with high-potential solutions that may not align precisely with one of the defined themes but still contribute meaningfully to the West Midlands' clean growth agenda.

Eligible proposals should demonstrate:

- A clear link to sustainable transport or clean manufacturing
- The potential to support business growth, job creation or job protection in the West Midlands
- An emphasis on innovation and alignment with Coventry University's research and testing capabilities, particularly in transport-related manufacturing

This challenge is intended to surface valuable solutions that may fall between traditional categories but still drive impact, innovation and regional economic benefit.

4. Benefits

Since 2018, Connected Places Catapult has delivered accelerator programmes, culminating in a well-honed delivery methodology designed to generate significant impact for both small and medium-sized enterprises (SMEs) and their industry counterparts. Participation in the Clean Futures Accelerator will afford successful applicants a comprehensive suite of benefits, elaborated upon below:

- **Financial Support:** Successful applicants will be eligible to receive funding of up to £50,000. This financial injection is intended to facilitate the development and scaling of innovative clean future solutions.
- **Technical Resources and Assistance:** Participants will gain access to state-of-the-art technical facilities and receive dedicated support from expert personnel. This access aims to de-risk development processes and accelerate technological advancement.
- **Tailored Commercial Guidance:** Bespoke commercial consultancy services will be provided to assist participants in refining their business models, market entry strategies, and overall commercial viability within the clean technology sector.
- **Expert Coaching and Mentorship:** Participants will benefit from one-to-one coaching and mentorship from experienced industry leaders and subject matter experts. This guidance is designed to support strategic decision-making and foster professional growth.
- **Strategic Networking and Showcase Platforms:** The programme will provide valuable networking opportunities with key industry stakeholders, investors, and

potential collaborators. Participants will also have the chance to showcase their innovations at prominent industry events.

- **Business Growth Opportunities:** Through targeted initiatives and introductions, the programme will actively facilitate business development opportunities, enabling participants to forge strategic partnerships and secure new market avenues.

5. Eligibility

The Clean Futures Accelerator is open to all business, including micro, small and medium-sized enterprises in existing supply chains as well as those looking to move into new sectors. Clean Futures also welcomes bids from consortiums of partners, with a lead applicant who will be the funding recipient.

Required:

- A registered United Kingdom company address.
- Registration or operational base within the West Midlands region.
- Demonstrable alignment of the proposed solution to one of the specific challenges outlined within this programme.
- Commitment to undertake travel to and attendance at all scheduled face-to-face meetings and events held within the West Midlands.
- Commitment to complete the development, testing, or demonstration of the proposed solution within a real or relevant environment, potentially utilising Coventry University test site facilities.
- Provision of in-kind match funding equivalent to 100% of the requested funding amount (e.g. personnel costs, materials).

Encouraged:

- A registered United Kingdom company address located within the West Midlands Combined Authority region.
- An innovative technology or solution currently at Technology Readiness Level (TRL) 4 or above.

West Midlands Presence

A strong connection to the West Midlands region is important for the Clean Futures Programme. While having a **registered office within the West Midlands** is preferred, we also consider applicants with an established **operational presence within the region** to be a good fit. By "operational presence," we mean ongoing business activities or a significant part of your operations being located here.

For applicants whose primary base is outside the West Midlands, it's important to note that **having an operational base within the region is a requirement for participation in the programme.** This signifies a commitment to the area beyond just participating in the accelerator. Applicants intending only to conduct testing within the region without establishing a meaningful operational presence would not meet this expectation. Our aim is to foster innovation and growth that benefits the West Midlands directly.

Please note that by applying, you accept that any resulting offer of a place on the programme shall be subject to the provisions of this guidance document and the terms outlined in the [Terms and Conditions](#).

6. Further Information

If you are still unsure about whether your company and solution would fit the programme scope, please contact the Clean Futures support team for assistance:

Harriet.Muscroft@cp.catapult.org.uk

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