



# Transforming Foundation Industries

## India Collaboration

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# Innovate UK

- We are the UK's innovation agency
- We support business-led innovation in all sectors, technologies and UK regions
- A key delivery body of the Government's Innovation Strategy

## Our Mission

To help UK businesses grow through the development and commercialisation of new products, processes, and services, supported by an outstanding innovation ecosystem that is agile, inclusive, and easy to navigate.



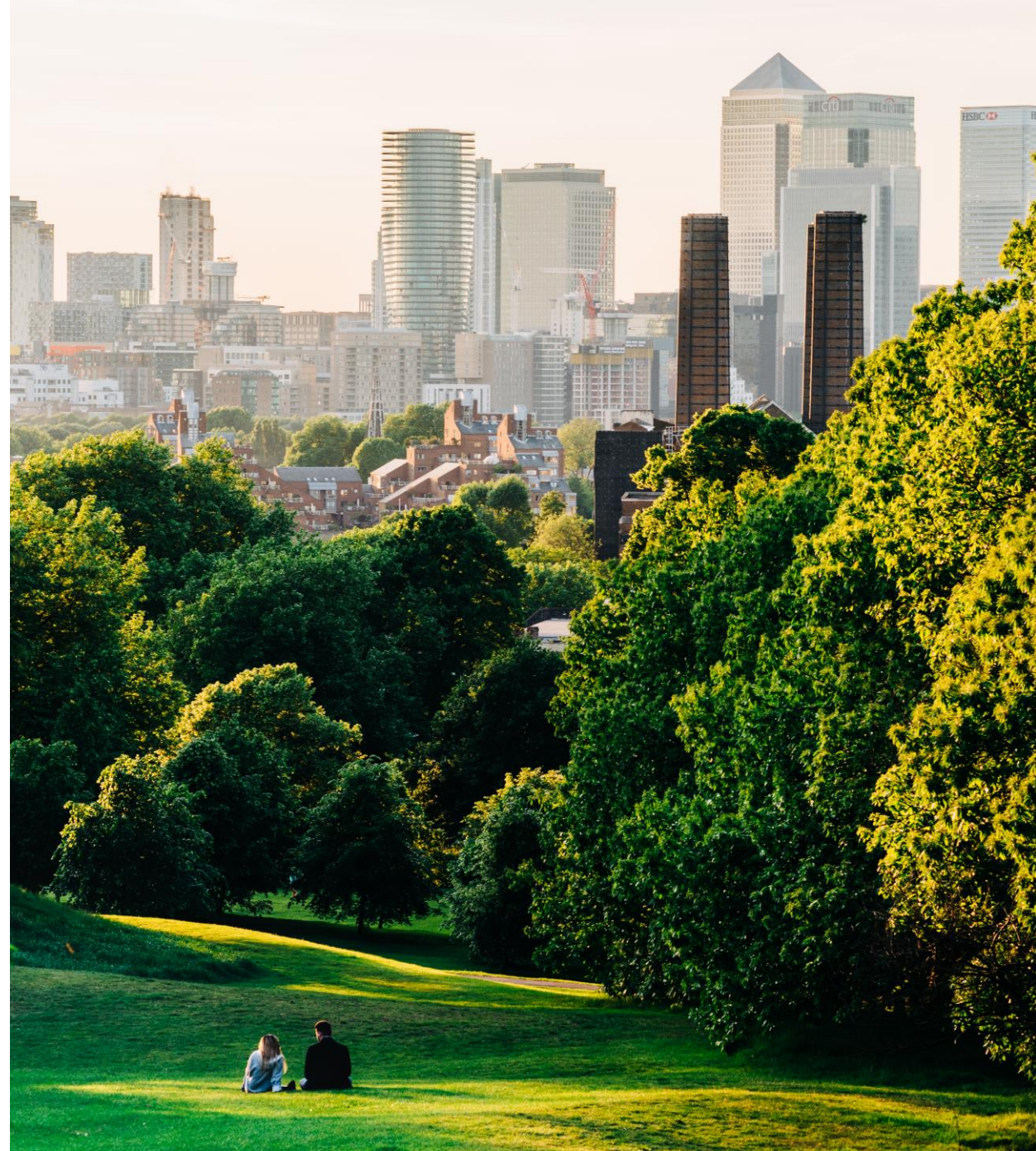


# TFI Challenge

## Vision

*A sustainable net zero way of living needs carbon neutral products. These can only be produced in decarbonised supply chains, with reliable availability of low carbon materials, designed for each product application and for product and material re-use.*

The programme aims for the UK to be world leading in developing **resource efficient, agile** foundation industries, equipped with the **foresight** to understand the changing global demands, and supported to develop thriving, supportive, **innovation driven communities** and sustainable **operating models** to serve future supply chains.





# The Foundation Industries

- £149m programme with £66m of government funding, running until 2024
- Supporting the glass, metal, chemical, paper, ceramic and cement sectors – responsible for 50% of UK's industrial emissions
- Catalysing innovation to develop resource and energy efficient technologies and new ways of working
  - Scaling Innovation
  - Industry-led Innovation
  - University Technology Transfer
  - Supporting Innovation
  - Providing Late-Stage Finance



# TFI Challenge

## Programme Objectives

*A sustainable net zero way of living needs carbon neutral products. These can only be produced in decarbonised supply chains, with reliable availability of low carbon materials, designed for each product application and for product and material re-use.*

- Inspire **NEW DEMAND**

Explore with key sectors, such as construction and packaging, what their anticipated materials needs will be in 2050. Create a common vision to help industry and policymakers understand where to focus innovation and R&D. Build new communities across supply chains to facilitate innovation collaboration and create market-pull for low carbon materials.

- Involve **NEW PLAYERS**

Work with the foundation industries to identify and involve a diverse group of individuals to secure a resilient future workforce, embrace and support new collaborations and small businesses, and widen horizons for international opportunities.

- Invest in **NEW MODELS**

Support to accelerate the development and adoption of new operating models and technologies to enable increased process and resource efficiency. This will include new business models, new supply chain models and new procurement models.





# Why India?

- 2030 Roadmap for Bilateral Relationship (with climate cooperation a key pillar)

[2030 Roadmap for India-UK future relations - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

- Ongoing discussions of a Free Trade Agreement

[Joint outcome statement: UK-India round six FTA negotiations - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

- Series of successful engagement activities with India including a lab-to-lab collaboration programme and the Global Expert Mission.

[Uniting over challenges: UK-India foundation industries partnership – UKRI](#)



# UK – India Foundation Industries



- The mission has undoubtedly identified a number of key transformation change areas where collaboration in research and innovation, start-up emerging technologies and at industry levels across supply chains would be beneficial to the UK and Indian economies if they can be achieved in practice.
- There is a need to take a broader, more holistic, cross-sector approach across the supply/value chains for each sector to address challenges that no one sector can tackle in isolation, such as new national and regional infrastructure needs; domestic and commercial waste material recycling and reprocessing facilities.
- Having a reliable supply of better quality recycled materials from process waste is doubly beneficial, particularly for scarce materials, such as precious metals, reducing the need for virgin raw material sourcing, which helps to reduce the overall supply chain carbon footprint of manufactured products.
- An international approach is also needed to make radical changes to long-established regulatory standards and specifications for FI products currently manufactured, such as cement, concrete, glass and steel, based on performance, that could open up opportunities to reformulate and use alternative by-product materials from another FI sector that is currently waste.

# UK – India Foundation Industries



- Key areas for collaboration include:
  - Industry 4.0, big data, digitisation and the use of sensors and control systems
  - Existing and emergent technologies to reduce carbon emissions
  - Use more process waste as an added value by-product, and provide process efficiency improvements on existing plants
  - Energy efficiency through advanced refractory technologies, process and burner design efficiency, reheating kilns and furnaces to maximise on-time power versus dead time.
  - Developing more efficient furnaces, burners, boilers and waste heat recovery systems that can be retrofitted to existing plants and equipment



# Next Steps



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# Questions?



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