



Full List of winners: [Building a resilient recovery competition](#)  
ISCF Transforming Foundation Industries challenge

- ***Continuous production process for 3D printed ceramic foundry filters, suiting all applications (WEST MIDLANDS)***  
A novel process and formulation of high quality, reproduceable ceramic filters for the metal casting sector
- ***Novel EAF Composite Feedstock (NORTH EAST)***  
Developing new composite feedstock for electric arc furnaces, used to create clean, high quality steel
- ***Recovering cotton fibre from UK post-consumer, mixed composition textile waste for use in paper manufacturing (NORTH WEST)***  
Study on alternative fibres for the paper-making process, sourced from post-consumer textile waste
- ***The World's first ceramic glazed tiles – made from 100% recycled materials (NORTH WEST / SOUTH WEST)***  
Developing glazes for fast-fire manufacturing of ceramic tiles made entirely from recycled waste
- ***Co-production of Lithium and China Clay in Cornwall – CLiCCC (SOUTH WEST / LONDON)***  
A new approach to cutting-edge lithium extraction from existing china clay manufacture to create new resources of this vital low-carbon metal
- ***Foundation Industry Wastes for Cement Encapsulants (WEST MIDLANDS / NORTH WEST)***  
More effective encapsulation of hazardous wastes in new geopolymers cement to offer a product with a low CO<sub>2</sub> footprint
- ***Low Carbon Concrete Manufacturing Process (SCOTLAND)***  
A cost-efficient, low-carbon concrete manufacturing solution using waste materials
- ***BACpack (SOUTH EAST)***  
A study on the potential to re-use low-carbon scrap for the manufacture of aluminium sheet for packaging and other large-scale applications
- ***Glass cullet conversion To waste glass and used, with cement bypass flue dust, for cementless concrete building products – GUITAR (NORTHERN IRELAND / NORTH WEST)***  
Demonstration of a new manufacturing process for producing cementless concrete products, making use of waste materials
- ***Graphene Enhanced Concrete for a Resilient Recovery (SOUTH WEST / NORTH WEST)***

Development of a graphene additive to enhance the strength of concrete and reduce the need for steel reinforcements and lower the industry carbon footprint

- ***Cloud Cycle & HS2: Transforming Cement & its Supply Chain with IoT, Machine Learning & Big Data (LONDON / WEST MIDLANDS)***  
Data-led solution for reducing concrete waste across the building site and enhance oversight of delivery, emissions and usage
- ***Study of the feasibility of producing artificial pozzolana at existing cement facility for use as an alternative raw material in Portland Cement (NORTHERN IRELAND)***  
Using abundant clay deposits to create materials that can replace the use of the limited supplies of fuel ash and furnace slag that are in the UK for concrete production
- ***Bio-based solvent identification and evaluation for use in polyurethane resin binders for the roofing industry (NORTH WEST / YORKSHIRE & HUMBER / SOUTH EAST)***  
Looking into innovative bio-based solvents for the roofing industry to replace the existing petroleum-based solutions used in the UK
- ***A novel biocatalyst platform for biobased-synthesis of 1,3-propanediol (LONDON)***  
Development of new synthetic biology technology for the biofuels industry that converts waste glycerine into valuable propanediol for re-use in other products
- ***SCI-FI: SCalable, Intelligent condition monitoring for Foundation Industries (SOUTH EAST / EAST / WEST MIDLANDS / WALES)***  
Adaptation of a cost-effective approach to automated conditional monitoring of machinery in the automotive sector for use in the steel and papermaking industries
- ***hot Gas Raman Identification and measurement For Foundation Industries – GRIFFIN (SOUTH EAST / YORKSHIRE & HUMBER / WEST MIDLANDS / EAST MIDLANDS)***  
Utilising analytical raman gas measurement instruments across foundation industries to better monitor emissions, energy consumption and process control
- ***Breakthrough High Temperature Heat Pump Technology for Foundation Industry Decarbonisation (LONDON/ SOUTH EAST)***  
Development of the world's first sub-1MW high-temperature heat pump that can compete commercially with burning fossil fuels
- ***EcoLowNOx: Auxiliary Combustion System for Efficient Combustion with Low-NOx emissions for Foundation Industries (SCOTLAND / WALES / YORKSHIRE & HUMBER)***  
Assessing how global combustion system technology, which has shown to reduce NOx by more than 80%, can be used across a range of glass and steel furnaces
- ***A digital platform for industrial heat recovery in terms of supply chain management (WEST MIDLANDS / YORKSHIRE & HUMBER)***  
Development of a digital supply chain platform to improve industrial heat recovery and utilisation for foundation industries

### **About the Transforming Foundation Industries challenge**

The Transforming Foundation Industries programme through the Industrial Strategy Challenge Fund will help energy-intensive businesses to share expertise and come up with radical new innovations to help reduce their carbon footprint.

The programme will inject significant new public and industry innovation funding into the foundation industries, helping us deliver against our vision of a cutting edge, innovative and sustainable industrial sector. £66m will be provided by the government and £83 million will come from industry.

The [Industrial Strategy Challenge Fund](#) (ISCF) brings together the UK's world-leading research base with our best businesses to transform how we live, work and move around. It will put the UK in the best position to take advantage of future market opportunities.