

# Transforming the Foundation Industries Research and Innovation Hub



NEPIC Clean Growth Conference 2022: Net Zero in the North East  
Professor Justin Perry, Northumbria University, Bulk Chemicals Co-Lead for TransFIRe



## The Vision



a proactive, multidisciplinary research *Research and Innovation Hub* that

- optimises flows of all resources within and between Foundation Industries (FIs),
- improves competitiveness
- works with communities
- assists UK in achieving GHG Net Zero 2050 targets
- develops an ED&I strategy for the FIs



## The Scope



a proactive, multidisciplinary research *Research and Innovation Hub*

- £5.9 M funding over 3 years having started 1 July 2022 with co-funding from industry.



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- Academic partners supported at 14 different universities and research institutes



British Geological Survey



THE UNIVERSITY of EDINBURGH

UNIVERSITY OF LEEDS

Sheffield Hallam University



UNIVERSITY of York

UNIVERSITY OF EXETER



UNIVERSITY OF CAMBRIDGE

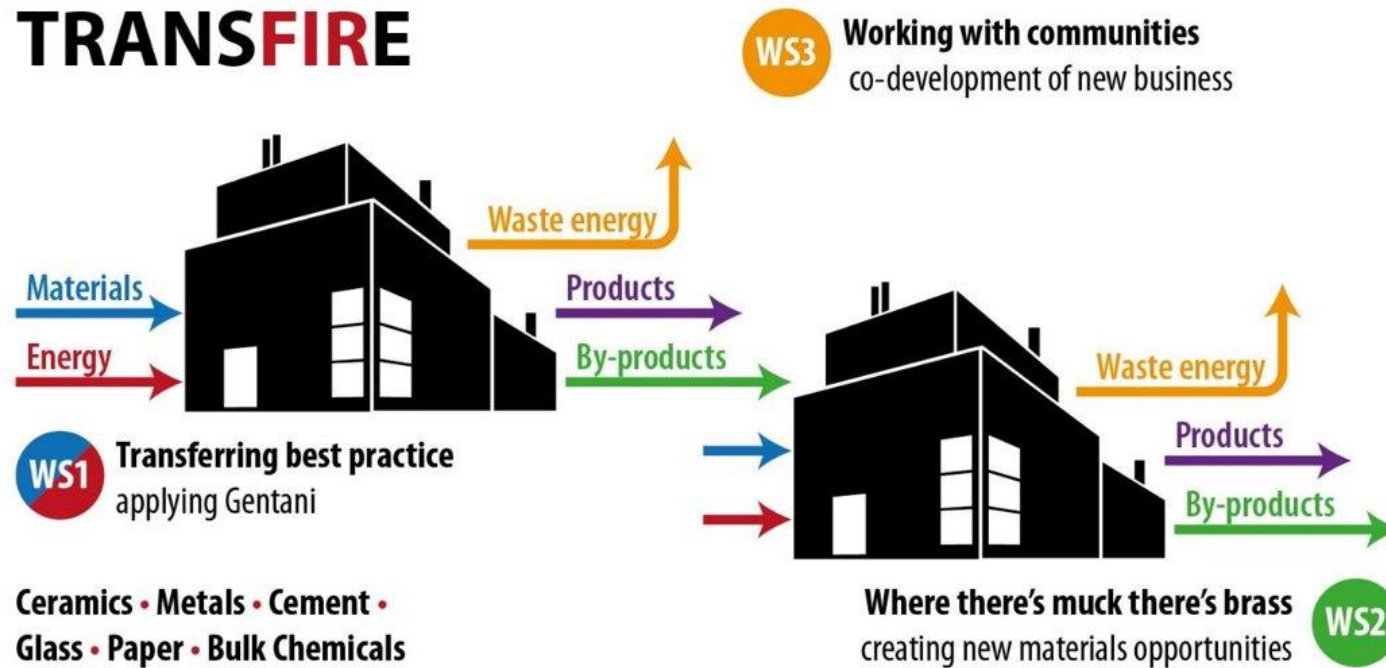


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## TRANSFIRE





## The Scope



a proactive, multidisciplinary research *Research and Innovation Hub*

- £5.9 M funding over 3 years having started 1 July 2022.
- More than 75 partner companies across the 6 sectors
- Academic partners supported at 14 different universities and research institutes
- Three workstreams covering all FI sectors.
- Developing an ED&I strategy for the FIs



## WS2



### Case Study on **new products from high grade polymer particulate waste streams**



- Investigating how to monetize polymer wastes
- Converting non-recycled PET (from a UK-based recycler) to an alkyd polymer suitable for coating. This replaces the phthalic anhydride component in part or completely. (Jayplas, AkzoNobel)
- Converting waste from powder coating manufacture to a component of composite materials (AkzoNobel and Texon)
- Converting waste for paper production into biosourced, biodegradable latex emulsion-based coatings.





**WS2**



## Case study on **spent foundry sand**

- The Cast Metals Federation reports that the UK foundry sector generates 120,000 - 200,000 tpa of spent foundry sand across a wide geographical spread in the UK.
- Currently most is sent to landfill.
- The project has identified the nationwide sources for this material and assessed the composition and variation of the sand to assess its suitability for other uses.
- Looked at its suitability as an input into cement, glass and cement sectors.





## WS2



### Industrial symbiosis (so far)

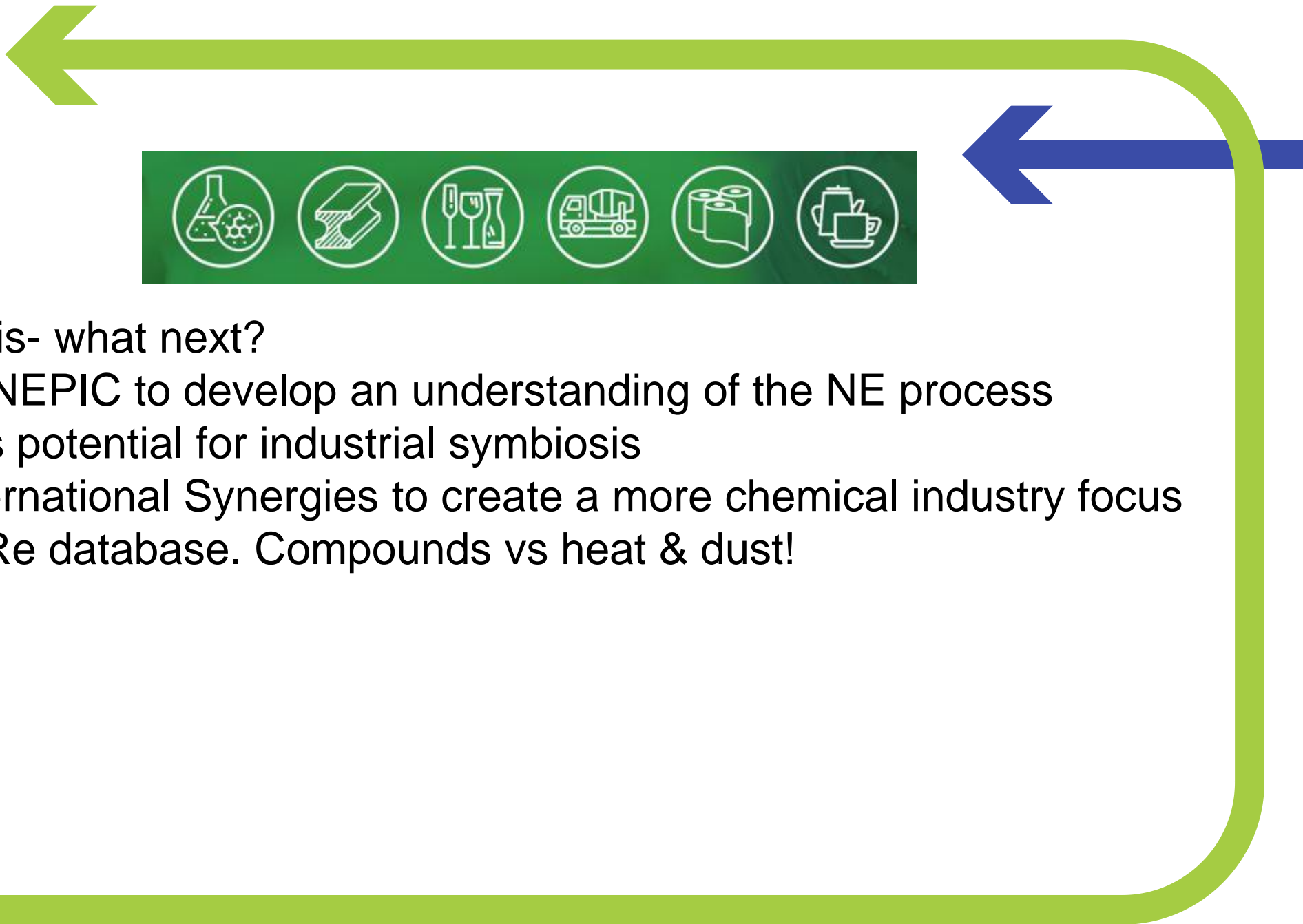
- Working with International Synergies who have software assets to draw networks of use/reuse. (what, how much, how often, keywords)
- First workshop:

- 45 companies attended and offered their list of wastes and wants. 172 resources were presented which offered 83 potential synergies
- **Example 1**, a NW ceramics and a NW glass manufacturer discovered that one has a waste that was potentially an input for the other.
- **Example 2**, a NE chemical sector partner (NEPIC member) found sources of various materials from other foundation industry partners.





**WS2**



## Industrial symbiosis- what next?

- Working with NEPIC to develop an understanding of the NE process industry and its potential for industrial symbiosis
- Work with International Synergies to create a more chemical industry focus to the TransFIRE database. Compounds vs heat & dust!



**Next!**



- Join TransFIRE as a partner.
- No cost to join.
- Talk to us.
- We want to help you.



# Transforming foundation Industries Research and Innovation Hub



For further information:  
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