

# Transforming Foundation Industries Research and Innovation Hub



Crossing fences and building bridges: Understanding barriers to community-industrial partnerships for energy transitions



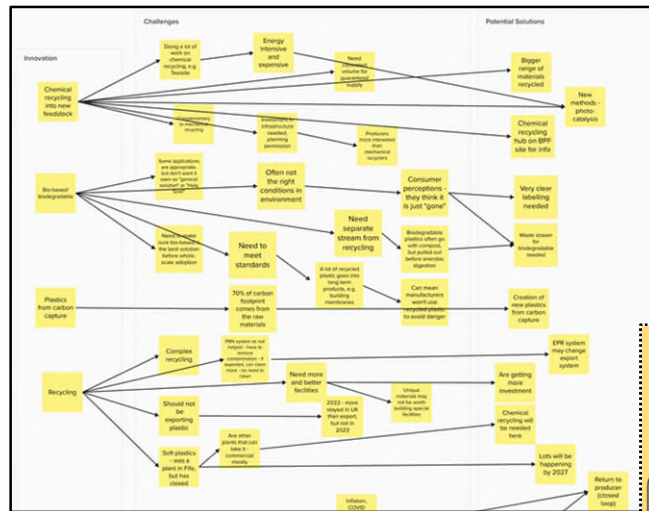
## Our workstream

- WS3 examines socio-economic, environmental and business aspects of the transformation of the FIs.
- **York: School for Business and Society**
  - Peter Ball and Juan Ramón Candia Jorquera
- **York: Stockholm Environment Institute**
  - Steve Cinderby, Jean McKendree and Howard Cambridge
- **Edinburgh: Science, Technology & Innovation Studies**
  - Steven Yearley, Kyle Parker and Mark Cassidy

# WS3 Working with communities - summary

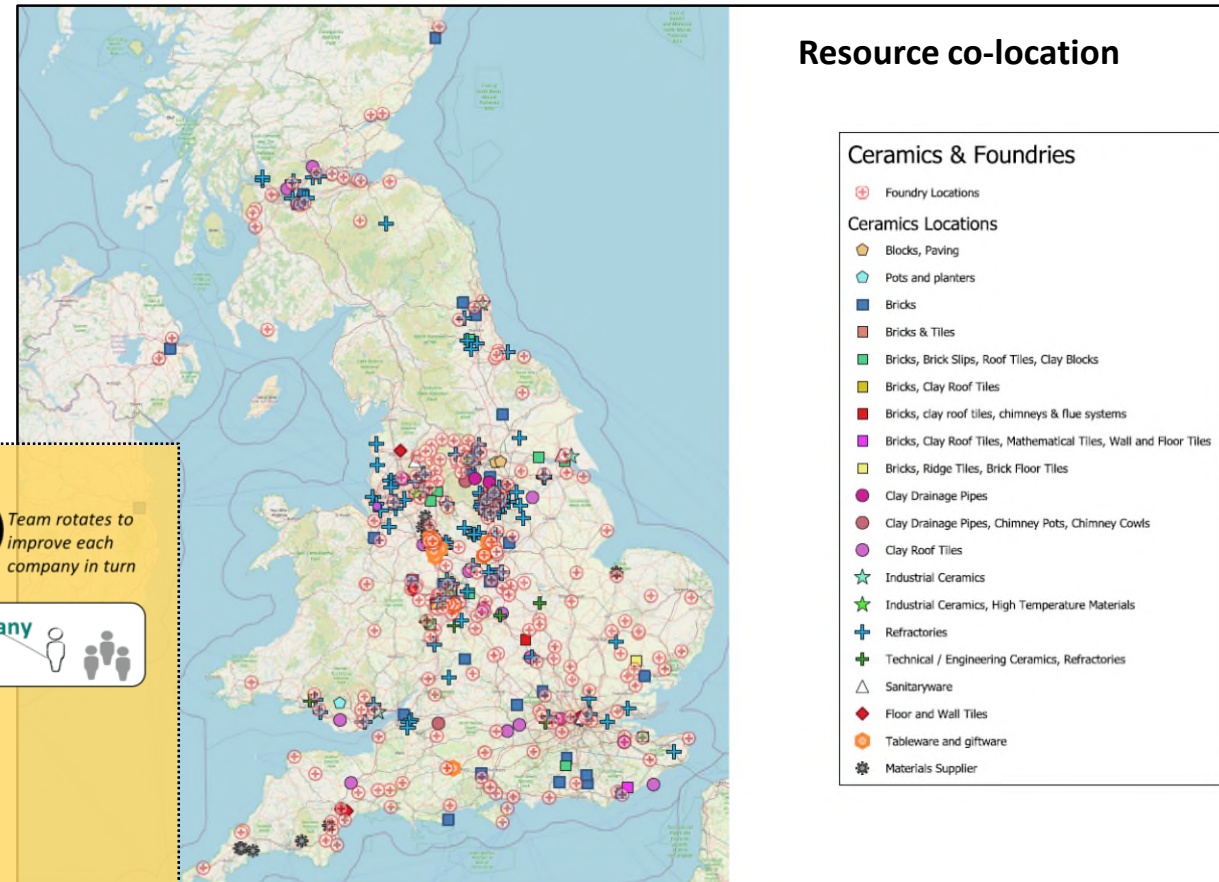
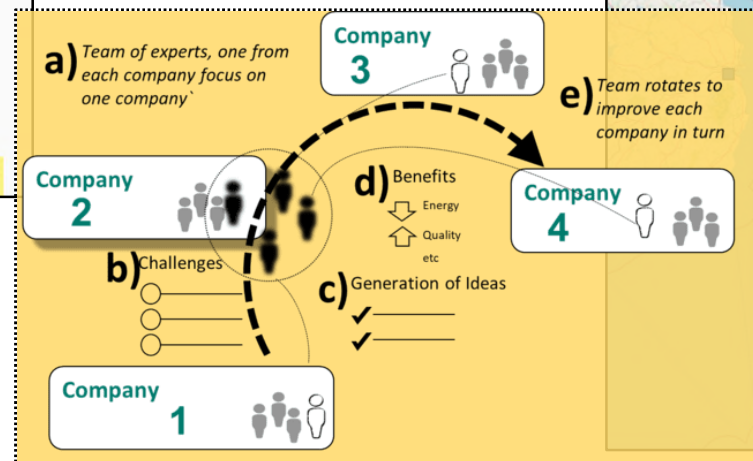
## Highlights

- Metrics for FIs “beyond the fence”
- Mapping for resource co-location
- Community use of waste heat – case studies
- “User Journeys” for FIs engaging whole Hub
- Pilot of peer-to-peer network of practice



British Plastics Federation UJ

## Peer-to-peer meeting





## Community uses of waste heat

- working with firms in their community settings: our group has worked on 9 cases across all FIs
- FIs typically run processes at elevated temperatures and thus produce “waste” heat – this heat is typically dumped into the environment, even when the local community is heat-poor
- examining incentives and opportunities (and barriers) to sharing over the fence for the energy transition.



## Firms in their community settings

- FIs are typically hot processes where firms find it hard to re-use all the 'waste' heat on the premises (to heat offices or pre-heat materials etc). They are likely to stay hot.
- As the glass TWG work shows, they are interested in reducing temperatures and heat – but over the fence options relatively ignored
- What gets in the way of them sharing that valuable energy with the communities in which they're located or marketing it to nearby enterprises?



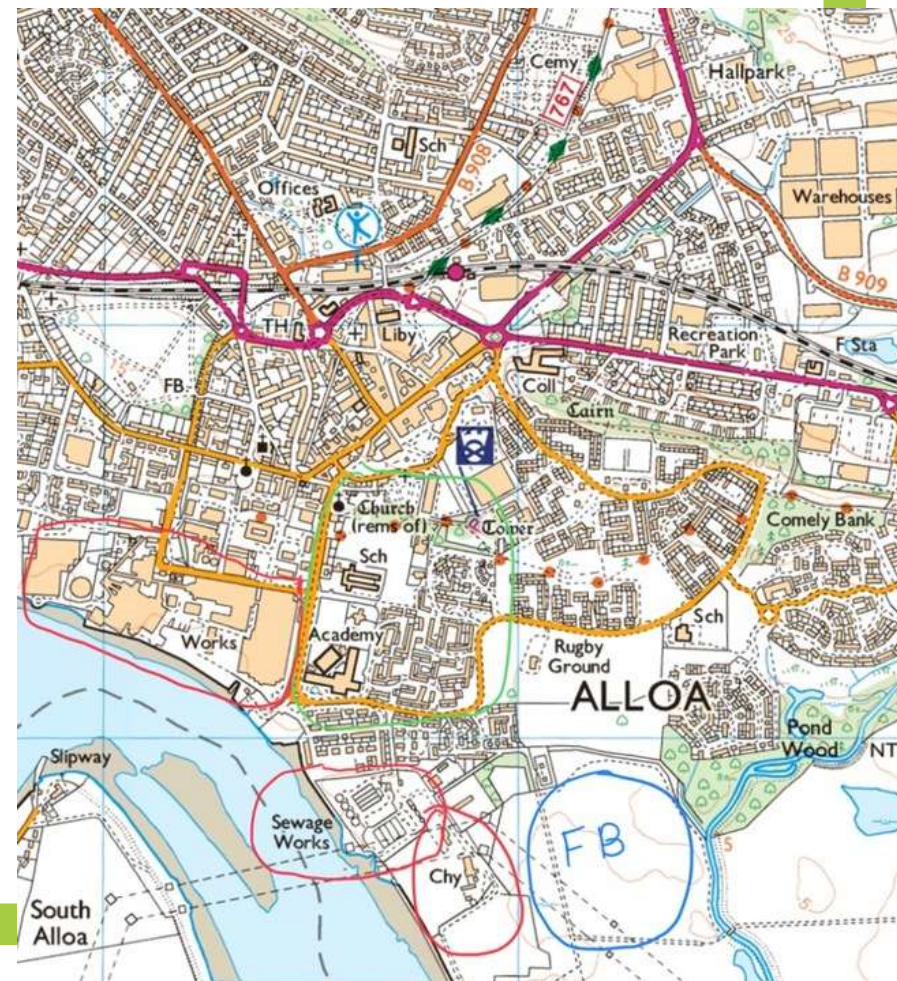
## Firms and heat - supply-side issues

- cost barriers to sending waste heat ‘beyond the factory fence’
- location is often historic and not optimised for re-use or decarbonisation
- lack of internal expertise and administrative capacity for setting up heat provision; also, local managers may not make such decisions
- lack of policy/regulatory/financial incentives
- contractual and legal issues / continuity of supply
- issues related to ambiguous emissions “Scopes” & carbon accounting schemes



## Industrial heat - demand-side issues

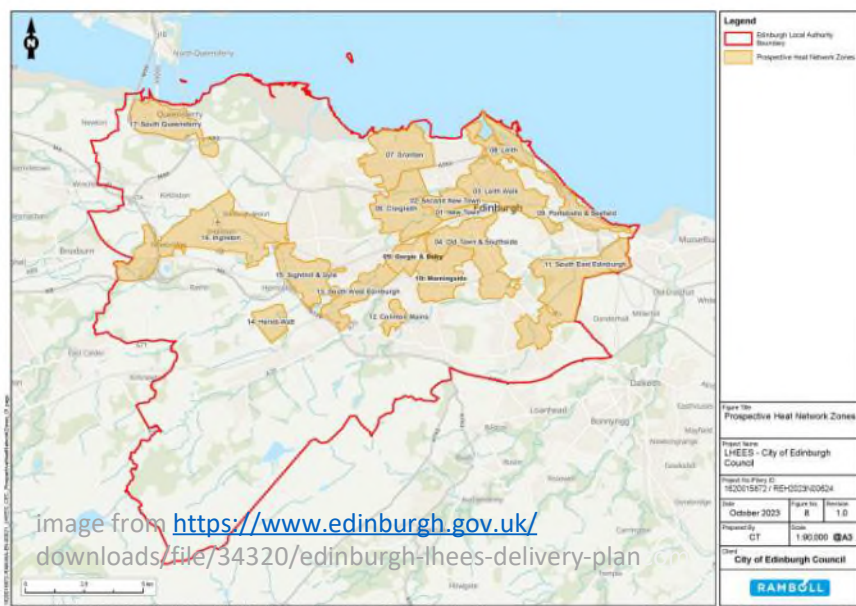
- the role of local authorities in planning for and meeting national decarbonisation targets
- attitudes to and perceptions of industrial waste heat
- ambivalence towards industrial sources of heat
- one success story ....



## Heat over the fence – intermediaries

- role of third-party companies in providing heat-exchange or networking services.
- issues with heat demand & working with (public & private) heat network operators – payments for non-guaranteed heat are v low.

- existing or planned heat networks can be a decisive advantage – though some LHEES don't emphasise industrial sources at all.
- This may be changing; recent Scottish Government consultations have identified industrial heat.







## Crossing fences and heat innovations

- over-the-fence heat can earn revenue or potential for credit under emerging Scope 4 emissions, it can save money and please regulators, politicians and local communities
- more informal arrangements can sometimes be struck
- FIs risk missing the boat in the current energy transition and being left behind with inevitably hot processes
- need to think more about “waste” heat and the future of high-temperature processes.