



Foundation Industry Forum – Day 2

Transformation Futures - Learning, Insights and Provocation from our projects

Exhibition hall (mural): <https://bit.ly/FoundationForum22>

Attendees on Zoom: 91, Active users on mural: 46

Workshop 2 consisted of short talks and pre-recorded videos from:

- Completed TFI Network+ projects
- TransFIRe's six cross-functional groups
- TransFIRe's case studies
- New projects commissioned by Network Plus.

What needs to happen to transform Foundation Industries?

A summary of viewpoints from our expert research teams about what are the keys to transformation of Foundation Industries

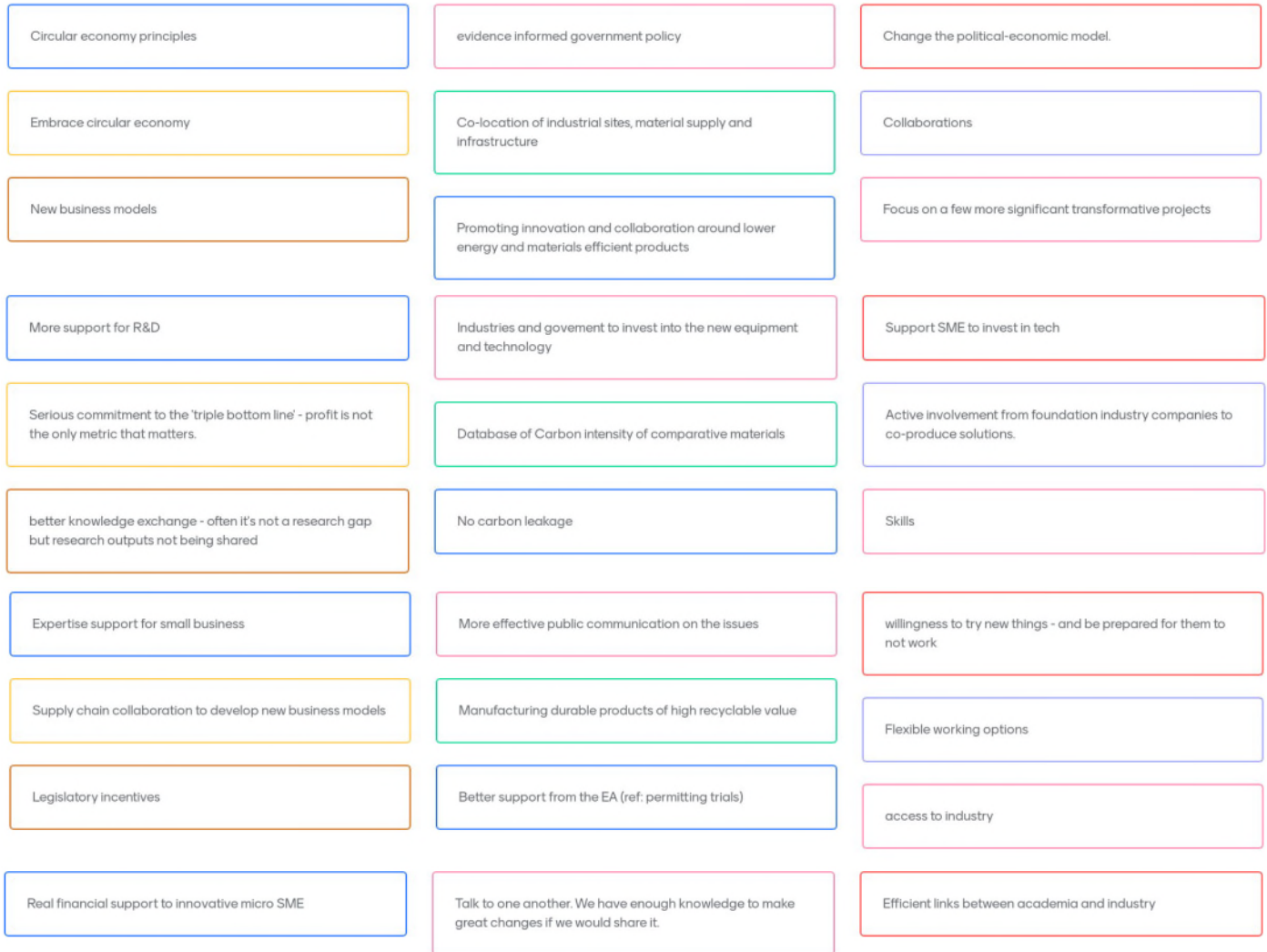
<https://www.youtube.com/watch?v=ThBuZYhbgOw&t=6s>

A summary of responses from the audience in the form of a word map is shown below. The detailed responses captured on Menti are also included.

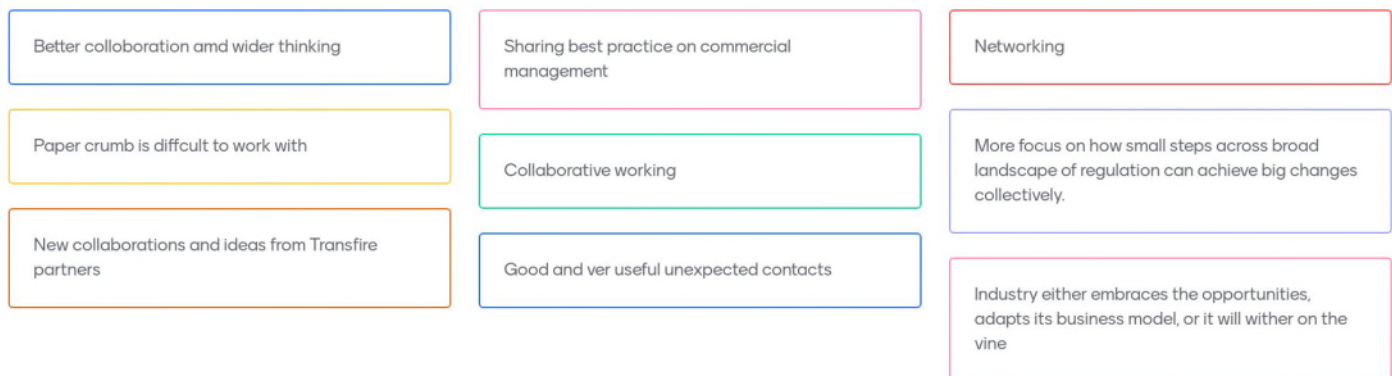


Menti 1: Responses from audience on the question: “What needs to happen to transform Foundation Industries?”

Cheaper electricity	More collaboration	Value resources more.
Collaboration	Supportive government policies	Long term Commitment between the parties
Investment	Serious approach to dematerialisation	Collaborations
Communication and collaboration	Shifting attitude on wastes.	Reduced energy intensity
Sharing best practice across industries	Mirowave heating	Use less. Dematerialise.
Investment, policy	Make the foundation industries tech focus.	Government support for decarbonisation
stop and think	Integration of new technologies	More willingness from big companies to work on R&D
More support from government	Cross sector knowledge transfer	More action less talking
Collaboration backing for long payback projects	Investment incentives for decarbonising initiatives	Changing mindset
ambitions from Gov and funding support.	Industrial symbiosis	We need to develop the necessary solutions and implement them urgently
More effective and targeted innovation	Clear business case to engage funders	Collaborate across foundation industries and supply chains.
Much more diverse workforce also at shop floor level	Free beer & Pizza	Collaboration, leadership and appropriate legislative framework
Proper carbon tax	Attract the brightest and the best	Consistent and uniform govt policy and properly regulated subsidy structure
Innovate business models.	Collaborative work with academia and industry	Integrating supply and demand side measures as both side require less radical changes
Specifying efficient materials	Higher costs of waste disposal, improved data on material flows through the supply chain, high-profile support on material reduction as a method to reduce GHG emissions	Require circular economy plans by operators of high emitting industries under BAT and EPR



Menti 2: Responses from audience on the question: "What needs to happen to transform Foundation Industries?"





Foundation Industries: Completed Project Showcase

Dr Peter Green, University of Liverpool

Improved Energy Efficiency of Float Glass Production,
<https://youtu.be/kBGC-B01W0Y>

Comments re: the presentation

Peter Callifas: Industry goes through a number of stages from Seed, to Mature to Decline. This is driven by either obsolete technology or business model or both. Taking into account now: supply side market risks, competitive activity, customer traction (why do they buy from us), Net Zero (scopes 1,2,3), circular economy, sustainability, green finance, energy, EPR and reputational risk: how would a business model to cope with these challenges now compare with the Foundation Industries as they compare now. This highlights risks and opportunities in equal measure. The business economics cannot be ignored, as profits are key to business survival and for investment purposes. So here we have inputs (a cost), COGS / Sales / Bottom Line, and then outputs, which downstream become waste. A classic linear economy. Reverse logistics is key here, as well as design for reuse and recycling, so that these resources are no longer waste, but substitute inputs.

Prof Hussam Jouhara, Brunel University

Investigation of a Flat Heat Pipe for high temperature waste heatrecovery from metal slabs
<https://youtu.be/M-cGdGhBfxY>

Dr Zushu Li, Warwick Manufacturing Group

Using blast furnace waste heat to convert various wastes into new rawmaterials for low energy glass

<https://youtu.be/nO3ittJbH54>

Comments re: the presentation

Peter Calliafas: Reminds me of a plasma arc company, the output of which was a vitrified material (a waste). We liaised with the EA and satisfied their criteria to have this material no longer regulated as a waste. Few hoops to jump through here. This turned it from a cost into a revenue opportunity, with market interest for its use as pipe bedding given the nature of its composition.

Dr Saurav Goel, London South Bank University

Feasibility study on valorisation of paper mill sludge to manufacture Eco-bricks

<https://youtu.be/6MiNbafMKdg>

Dr Argyrios Anagnostopoulos, University of Birmingham

Valorisation of foundry sands as medium-high temperaturewaste heat recovery materials

<https://youtu.be/02w9ghTut0l>

Transfire: Working groups**Professor Phil Purnell, University of Leeds**

Cement Technical Working Group

<https://youtu.be/1L0KCvpOHrY>

Dr Ahmed Khalil, University of Exeter

Ceramics Technical Working Group

https://youtu.be/R_nuGE30w3l

Professor Justin Perry, Northumbria University

Chemicals Technical Working Group

<https://youtu.be/cMla0l-U9gE>

Professor Paul Bingham, Sheffield Hallam University

Glass Technical Working Group

<https://youtu.be/6lgsWDp9Prc>

Dr Masoud Ahmadinia, Cardiff University

Metals Technical Working Group

<https://youtu.be/4mgTmWT7Vao>

Dr Simon Curling, Bangor University

Paper Technical Working Group

<https://youtu.be/zbhbdWoNeiQ>



[New Challenges and Learning Insights: TransFIRE Case Studies](#)

(Click title to access poster presentations)

Professor Paul Bingham, Sheffield Hallam University

Feasibility study for a regional hub to recover spent casting sand
(Exhibition stand 9)

Dr Anne Velenturf, University of Leeds

Opportunities for foundation industries in wind energy infrastructure end of use management
(Exhibition stand 13)

Dr Matthew Unthank, Northumbria University

New products from high-grade polymer particulate waste streams
(Exhibition stand 11)

Dr Ahmed Khalil, University of Exeter

Circular economy of Chrome Alumina Slag
(Exhibition stand 10)

Professor Phil Purnell, University of Leeds

1000 cuts case study
(Exhibition stand 12)

[Moving Forward: New Projects](#)

(Click title to access poster presentations)

Dr. Xinyuan Ke, University of Bath

Innovative green process to turn alkali solid wastes into carbon-negative feedstock for the cement
(Exhibition stand 21)

Dr Stephen Spooner, Swansea University

Sustainable Investment Assurance Model: SIAM
(Exhibition stand 22)

Dr. Cristina Valles, University of Manchester

Sustainable Replacements for Coal Tar Pitch Binders
(Exhibition stand 23)

Dr Silvia Tedesco, Manchester Metropolitan University

Paper & Construction industry symbiosis via AD for resource efficiency and a low carbon future
(Exhibition stand 24)

Dr Sam Adu-Amankwah, University of Leeds

Valorisation of metallurgical wastes through chemically bonded ceramics,
(Exhibition stand 25)

Dr Argyrios Anagnostopoulos, University of Birmingham

Deployment of a medium-high temperature waste heat recovery unit based on foundry sand
(Exhibition stand 26)

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