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## recomine at the BHP Tailings Challenge - Experiences and lessons learned

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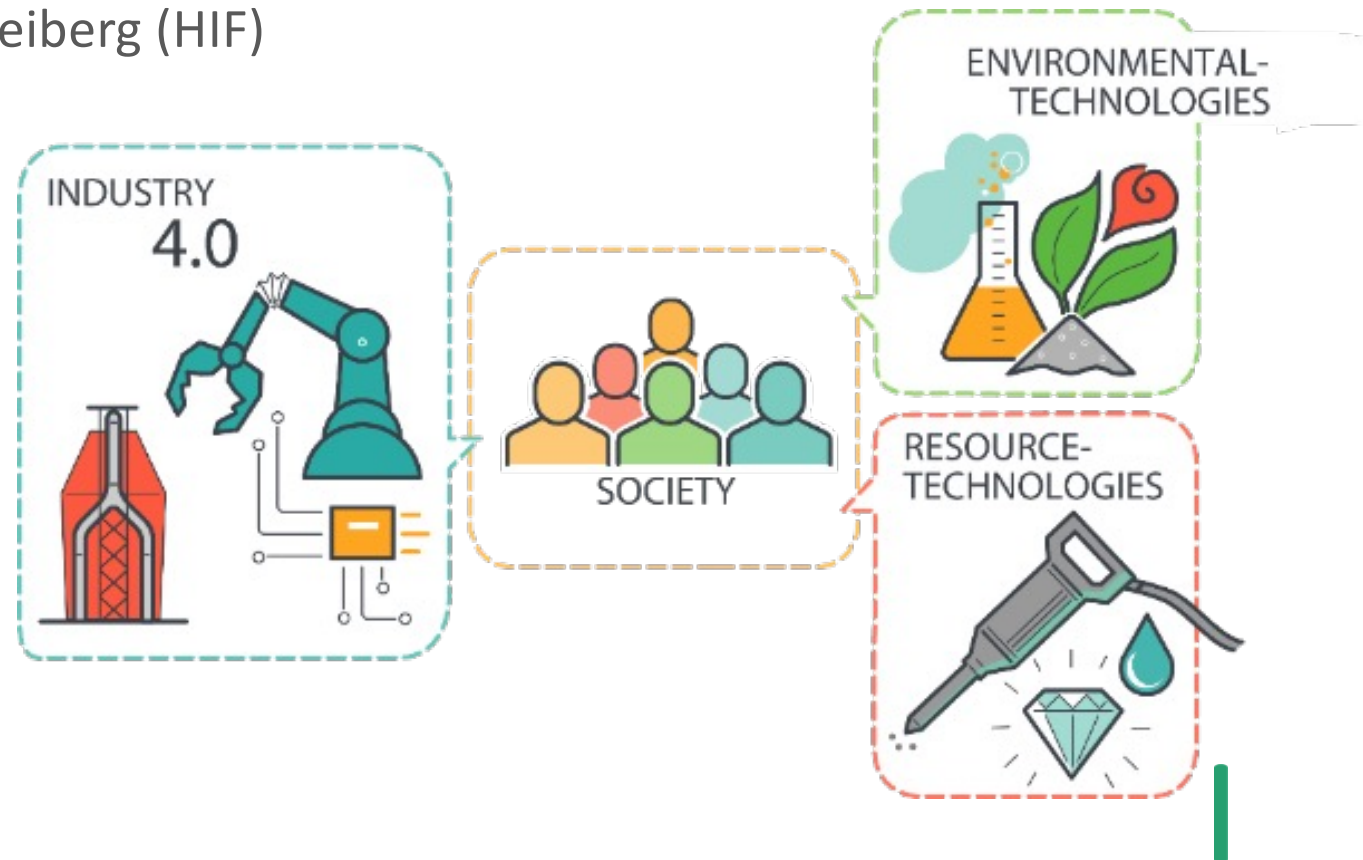




# The recomine-Alliance



- Holistic Mine Waste Solutions from the Erzgebirge/Germany
- > 100 institutions (Industry/Research/NGO/Politics/Education)
- Coordination by Helmholtz-Institute Freiberg (HIF)
- Strong Cross-Border Network to CZ
- 5 field laboratories (3 tailing sites)
- 18 R&D Projects & 15 Mio € Funding
- 1 EIT Raw Materials Project
- 1 EU Interreg Project with CZ



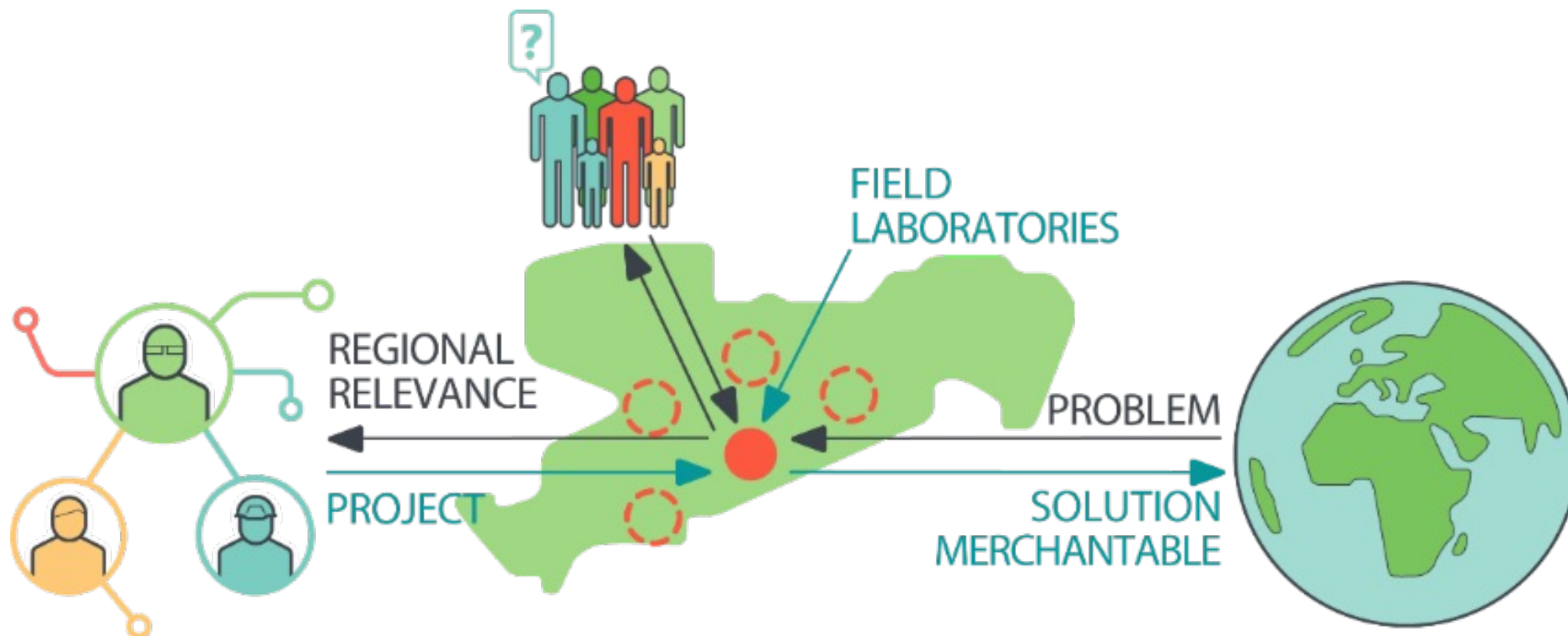
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# The recomine-Vision



# Strong International Industry Demand



Several Resulting Industry Challenges & Programs:



- August 2020: First Global Industry Standard on Tailings Management (published in London)
- Initiative of ICMM (27 biggest Mining Companies of the World)
- Aim: „Zero Harm“ for local People and Environment



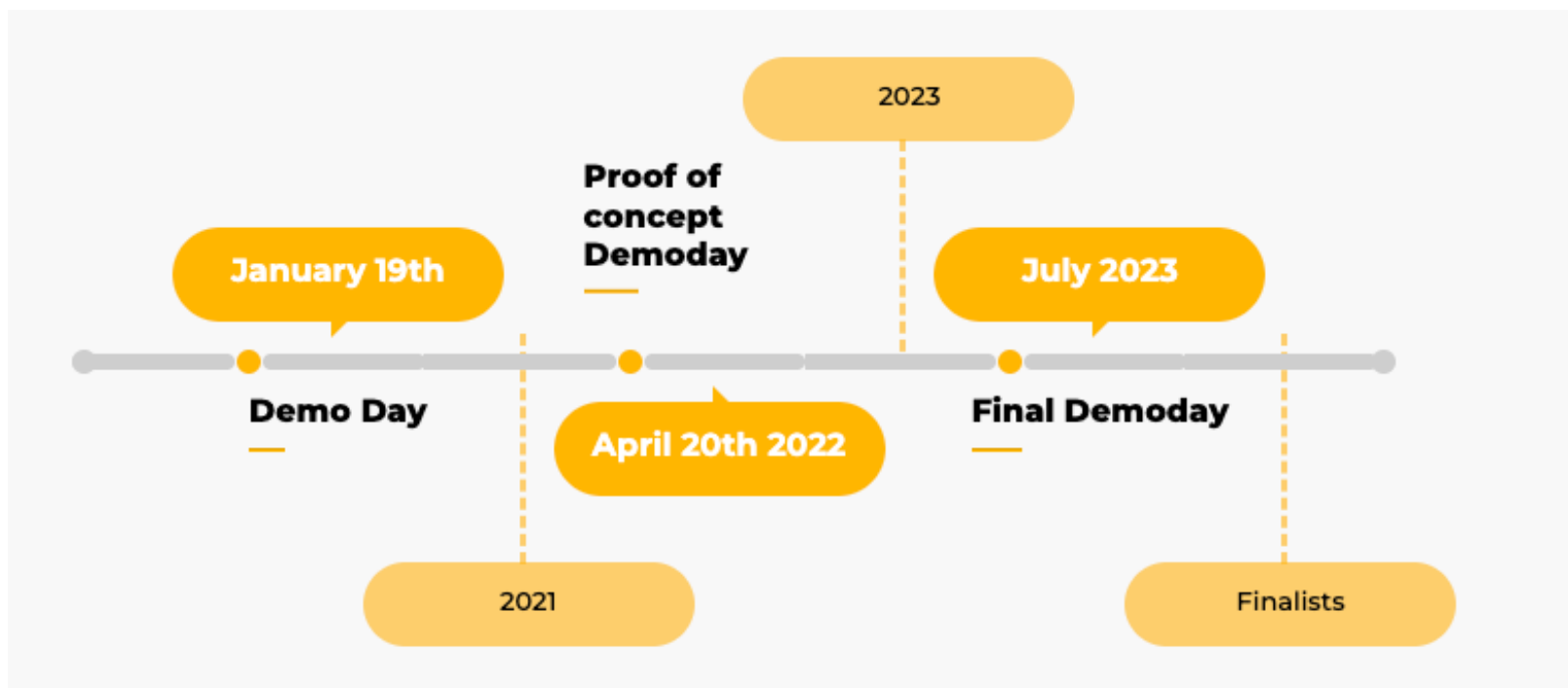
# The BHP Tailings Challenge

(Launched June 2020)



BHP with the support of Fundacion Chile, through its open innovation program EXPANDE, has launched “BHP Tailings Challenge”, an initiative that seeks to promote the development of innovative solutions for repurposing copper tailings.

The BHP Tailings Challenge is a global competition aimed at identifying the most innovative companies, startups, consortia, research centers and universities to help transform fresh tailings and create innovative business models.





# The BHP Tailings Challenge (Launched June 2020)



## Stages



### Open Call

- 153 applications from 19 countries were received during the two-month application period.
- A three-step evaluation process was performed, encompassing teams from Fundación Chile and BHP.
- Selection of the 10 proposals moving forward to the Proof of Concept Stage.



### Proof of concept

- Six-month stage where each of the 10 participants receives tailings samples and USD50,000 to validate their solutions at lab scale.



### Pilot

- Up to three teams will be selected and granted USD300,000 to perform during 9 months an integrated close loop pilot test in a controlled environment.
- Fundación Chile will support fundraising activities to help teams obtain additional funding for this stage.



### On-Site Industrial Pilot

- With the aim of igniting the tailings repurposing industry, one or more teams will receive a USD8.6 million grant (to be distributed in case of more than one team selected) to implement an On-Site Industrial Pilot.
- The goal of this stage is for the asset to be able to enter into a commercial agreement with a third party that will use its tailings as raw material to produce marketable products.

## Lessons Learned: Positive

- Visibility & fame
- Contacts to organizations, mines & competitors
- Access to exclusive data & material
- Support & training by the corporate
- Money for upscaling is available
- Follow-up projects on the same / other topics





## Lessons Learned: Negative



- Price-performance ratio too bad
- Licenses and IP granted for free
- One-fits-all contract that is not negotiated
- Internal decision-making structures in corporations complicated
- Expectations too high - solution expected too quickly (TRL too low)
- Mentality - corporate (business) vs. science/start-up (idealism)
- Global team = meetings at night

# Conclusion



- If you have a clear business idea, know your CAPEX and OPEX, and can handle upscaling - **go for it!**
- If you are a researcher looking for a case study for an innovative and new technology - **do not go for it!**





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