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Restart Parties in Ireland

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27th September 2018

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Presentation overview

- Work to date
- Findings
- Ongoing work

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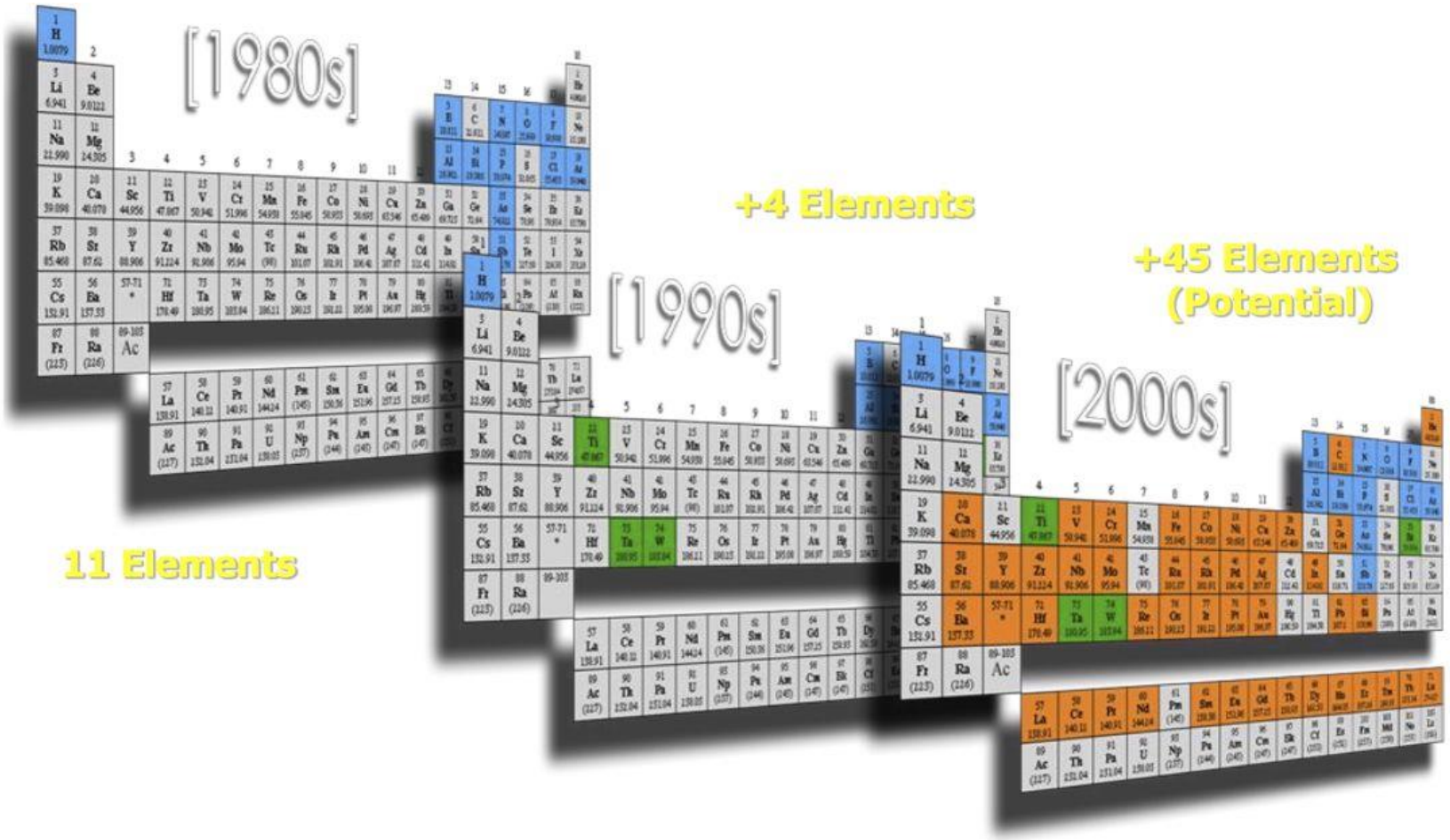
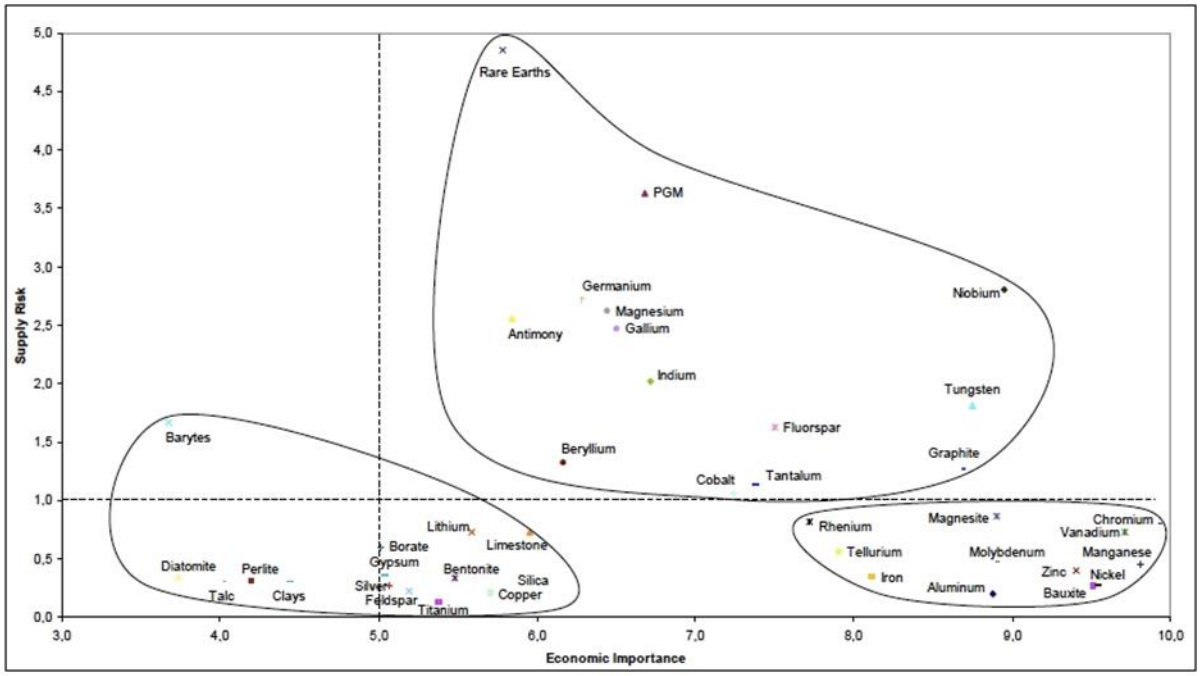
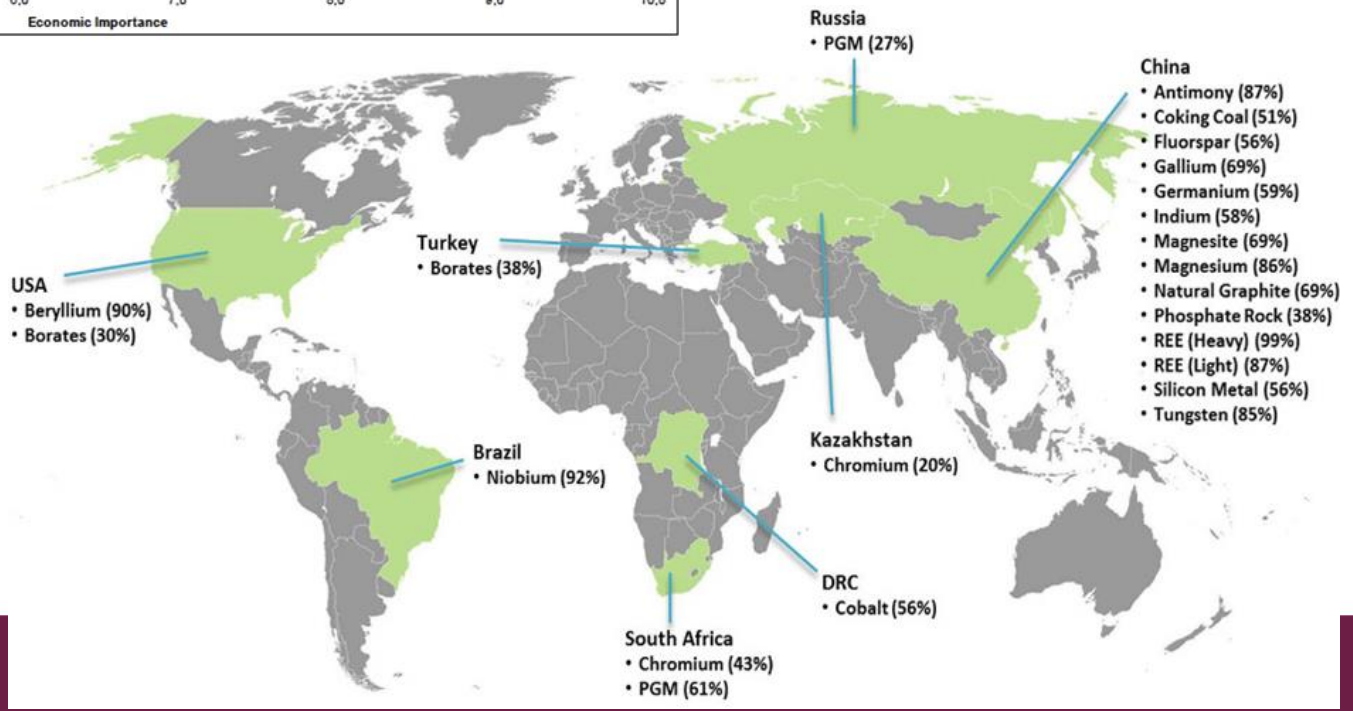



Supply Risk
Economic Importance
5,0
4,5
4,0
3,5
3,0
2,5
2,0
1,5
1,0
0,5
0,0
3,0
4,0
5,0
6,0
7,0
8,0
9,0
10,0
Rare Earths
PGM
Germanium
Magnesium
Gallium
Antimony
Niobium
Indium
Tungsten
Fluorspar
Beryllium
Graphite
Cobalt
Tantalum
Barytes
Lithium
Borate
Limestone
Gypsum
Bentonite
Diatomite
Perlite
Silica
Talc
Clays
Silver
Feldspar
Copper
Titanium
Rhenium
Magnesite
Chromium
Vanadium
Tellurium
Molybdenum
Manganese
Zinc
Nickel
Iron
Aluminum
Bauxite


Russia
• PGM (27%)
China
• Antimony (87%)
• Coking Coal (51%)
• Fluorspar (56%)
• Gallium (69%)
• Germanium (59%)
• Indium (58%)
• Magnesite (69%)
• Magnesium (86%)
• Natural Graphite (69%)
• Phosphate Rock (38%)
• REE (Heavy) (99%)
• REE (Light) (87%)
• Silicon Metal (56%)
• Tungsten (85%)
Turkey
• Borates (38%)
USA
• Beryllium (90%)
• Borates (30%)
Kazakhstan
• Chromium (20%)
Brazil
• Niobium (92%)
DRC
• Cobalt (56%)
South Africa
• Chromium (43%)
• PGM (61%)

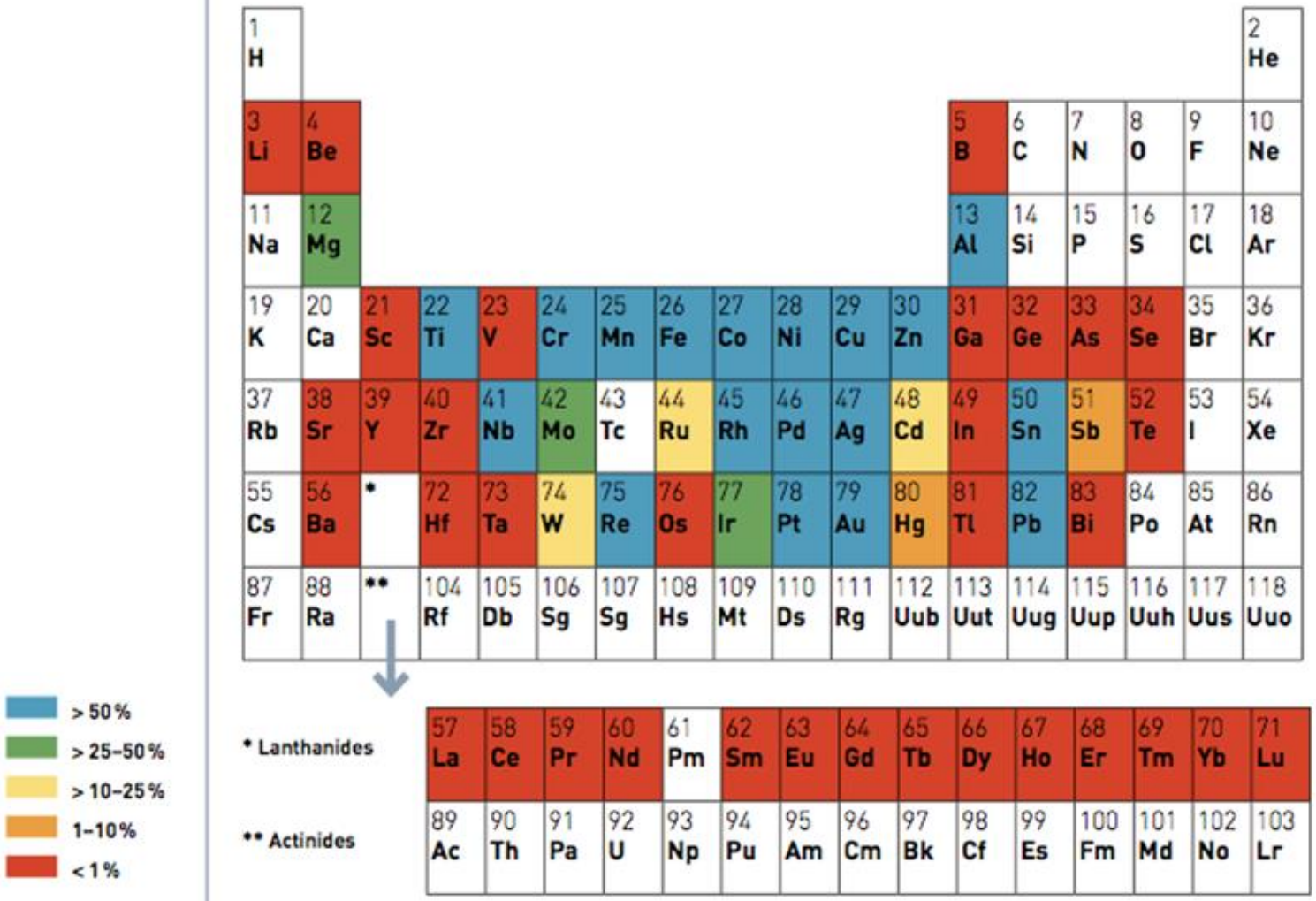


Figure 4.

EOL-RR for sixty metals: The periodic table of global average end-of-life (post-consumer) functional recycling (EOL-RR) for sixty metals. Functional recycling is recycling in which the physical and chemical properties that made the material desirable in the first place are retained for subsequent use. Unfilled boxes indicate that no data or estimates are available, or that the element was not addressed as part of this study. These evaluations do not consider metal emissions from coal power plants.


Micro USB 5-Pin Male Solder
Connector (Gold-Plated)

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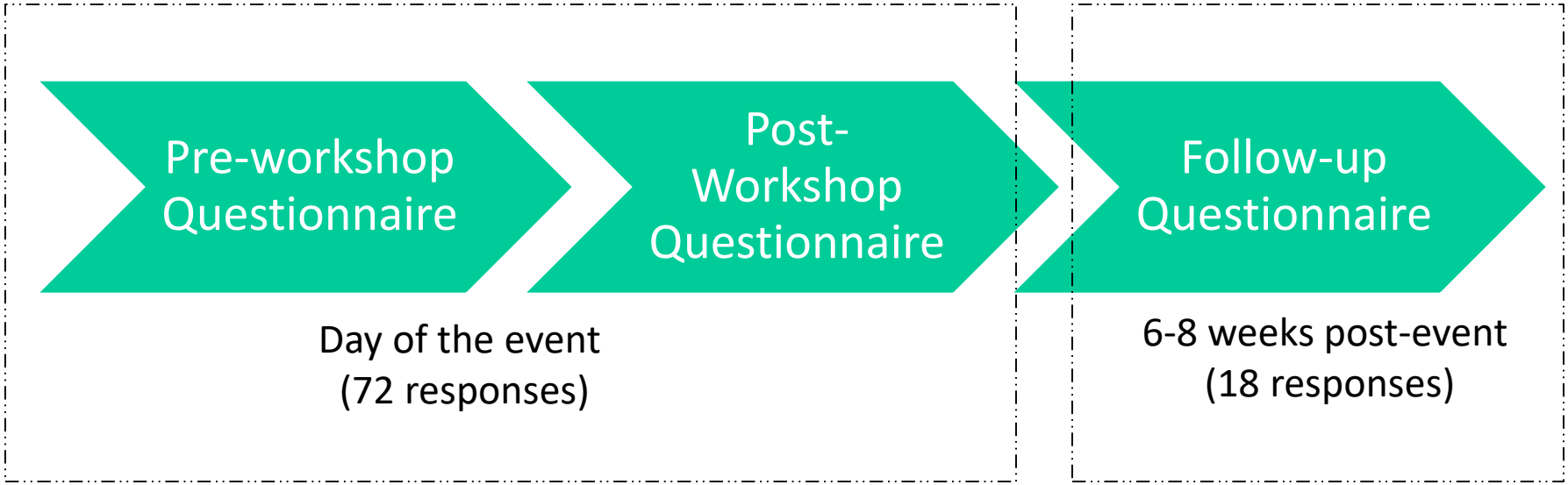
Pre-workshop Questionnaire
Post-Workshop Questionnaire
Follow-up Questionnaire
Day of the event
(72 responses)
6-8 weeks post-event
(18 responses)

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"Day of the event" findings

- People who come to repair events are well disposed towards repair to begin with but believe that specialist knowledge is required
- People enjoyed the repair events, especially the participatory nature of them
- The repair events confirm their positive attitudes towards repair

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"Follow up" Findings

- Participants become good ambassadors for repair
  - They have told people about the repair (83%)
  - They have shown people the repair (67%)
  - They post about the repair on social media (44%)
  - Encourage others to repair (39%)

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"Follow up" Findings

- Positive attitudes are sustained
  - I am proud of the repair (77%)
  - Since going to the repair cafe I have kept something that would otherwise have been thrown away (44%)
- Some evidence of behaviour change
  - Have fixed something else since the event (22%)

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"Follow up" Findings

- Achieving educational goals about CRMs
  - The repair made me more aware of the materials inside my technology (78%)
  - The repair made me more aware of the scarcity of some raw materials in technology (39%)

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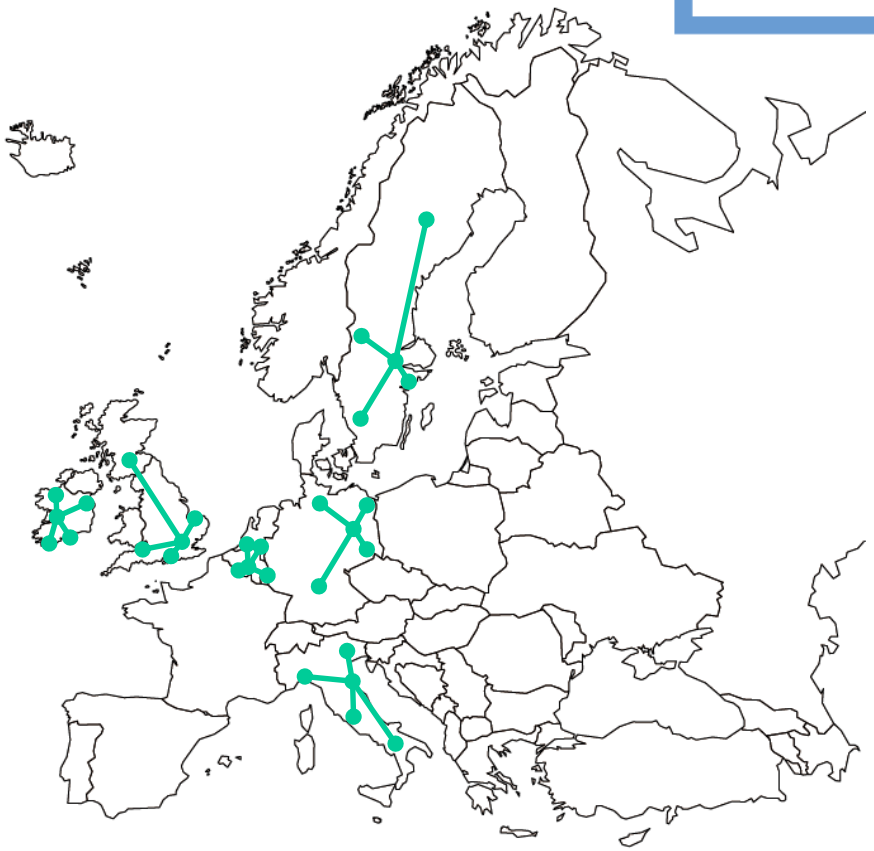

eit RawMaterials
Connecting matters

This activity has received funding from the European Institute of Innovation and Technology (EIT), a body of the European Union, under the Horizon 2020, the EU Framework Programme for Research and Innovation

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Connecting matters

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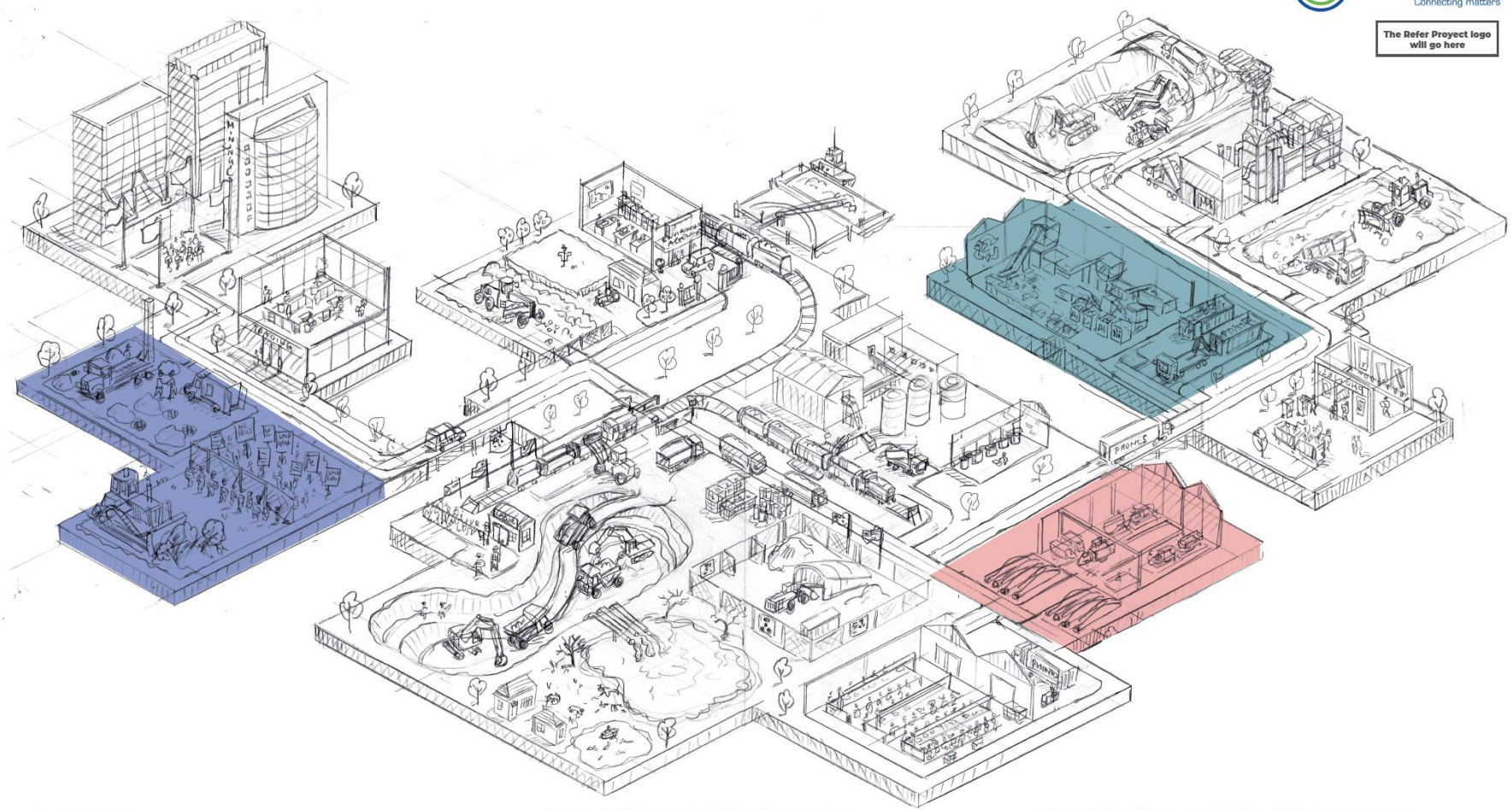


Impacts

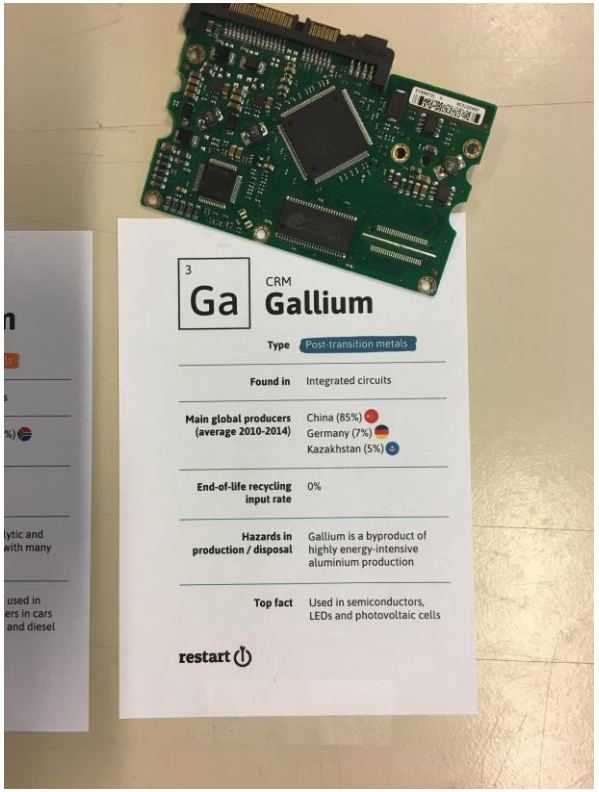
Critical raw materials are mined from other people's land, and the impacts of this mining are often invisible to us. Mining processes require a lot of environmental management and there is a high cost associated with this, so it makes more economic sense for this to occur in other regions of the world when possible. And if mining occurs in countries without rule of law, sound regulation and enforcement, risks arise. Use of acid and chemicals in mining processes can threaten health of nearby communities.

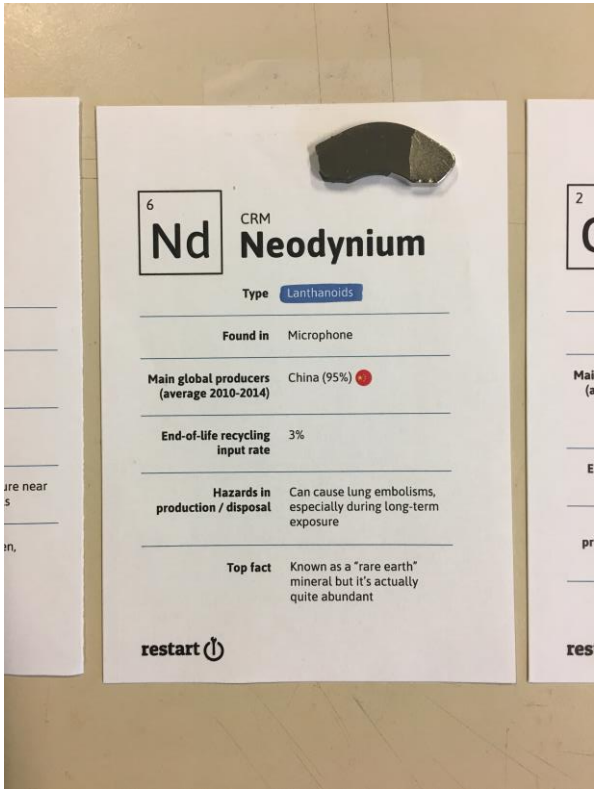
Recycling cannot keep up

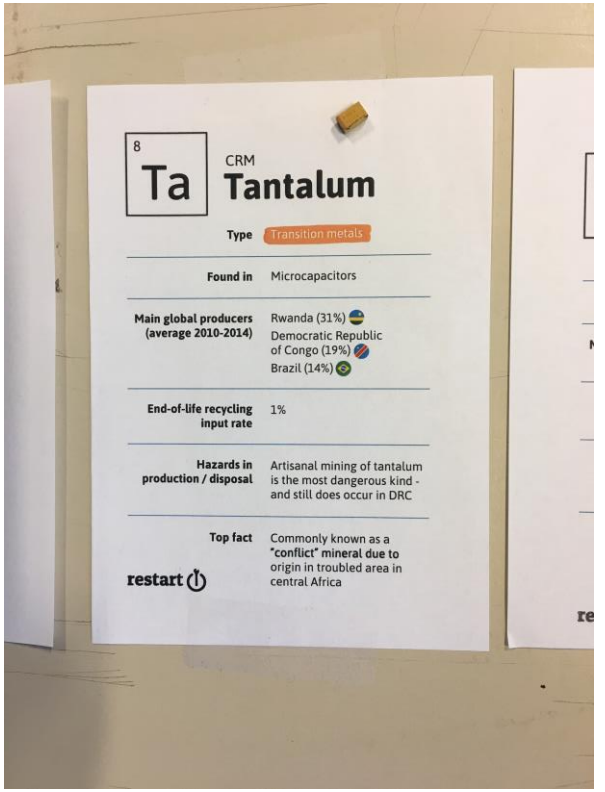
The vast majority of these critical raw materials cannot be recycled effectively - many have nearly insignificant rates of recycling. Recyclers are constantly playing catch-up to an ever-faster cycle of new products, new materials and new technologies – having to invent new techniques and business models for processing dead devices. What this means in practice is that demand for virgin critical raw materials continues to increase with every new product we buy.

Needed for renewable energy

In an age when we are moving away from fossil fuels, towards renewable energy, we must recognise that the same materials in our personal electronics are needed to scale up wind and solar energy production. Gallium (used in integrated circuits), indium (used in touchscreens), germanium (used in electrodes) are needed in photovoltaic cells and neodymium (used in microphones) is needed in wind turbines.

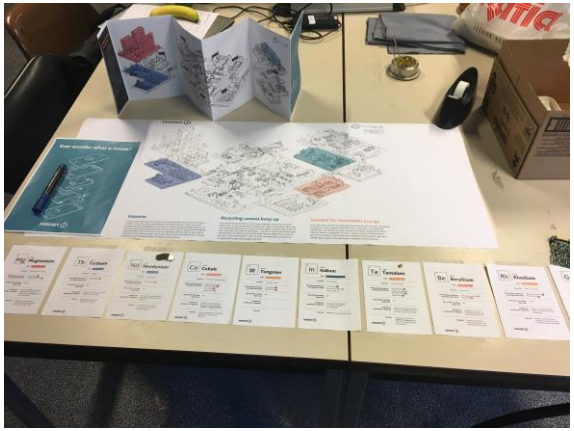






Critical raw materials + component containing it


zortrax

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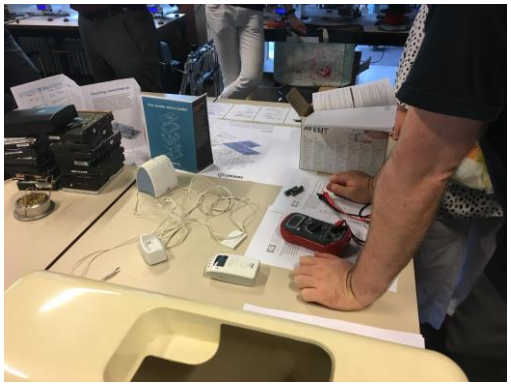

Non-repair activity: extract the Nd magnet from a HDD

Someone reading the concertina…

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- Pilots Autumn 2018
- 12 events in Limerick 2019

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Acknowledgements

- SFI Discover
- EIT Raw Materials