



THEME 1 : Access to rare mineral resources and feedstock



WORKSHOP 1 : RARE RAW MATERIAL ISSUES

23 June - 10h40 / 12h40

This workshop will address the economics of rare materials availability and propose solutions to better access those materials at acceptable costs :

- Identify where and how innovation is adamant throughout the supply chain : knowledge of geological distribution of metals in the earth crust or in the deep sea; exploration processes; mining, ore processing (with a focus on energy and water optimization, fine grained ores, clay or organic-rich ores, bleaching process); metallurgy (focus on optimized use of rare earths in alloys).
- Better understand the use of rare materials: quantitative assessments, range of end-uses, recycling, by-products (cf. gallium, indium, selenium)
- Tackle the problem of strong inflation in production costs: quantitative assessment, priorities for innovation drive (resource efficiency, process productivity), use of interdisciplinary approaches (incl social and management sciences).

Reading materials :

- > [Resource Revolution Meeting the worlds energy materials food and water needs.pdf](#)
- > [Conflict and coexistence in the Extractive Industries.pdf](#)
- > [McKinsey : Are you ready for a resource revolution.pdf](#)

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WORKSHOP 2 : POLICIES FOR THE XXIst CENTURY

23 June - 14h30 / 16h30

This workshop will look at policy issues and possible solutions for securing a safe and sustainable resources supply to meet the XXIst century demand :

- Identify the drivers that will steer the XXIst century resources demand and key issues, from a global sustainability, intra- and intergenerational perspective, that need to be addressed and by whom (companies, governments, local communities, NGOs, other stakeholder);
- Identify and discuss the respective roles of companies and public authorities;
- Determine multiple win, sustainable, raw materials and materials scenarios and how to overcome the looming dangers of resource nationalism

Reading materials :

- > McKinsey paper :
[Reverse the curse : Maximising the potential of resource driven economies](#)
- > German Institute for International and Security Affairs :
[Fragmentation or Cooperation in Global Resource Governance.pdf](#)
- > [McKinsey : Are you ready for a resource revolution.pdf](#)

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WORKSHOP 3 : BETTER ACCESS TO R&D

This workshop will cover the following themes :

- Prioritize the R&D projects needed for a sustainable future such as resource efficiency (product and waste reuse as well as recycling) and materials/product design for the circular economy (with special focus on the way shapes, geometries and topologies influence weak interactions) as well as efficiency in resources extraction, processing and transformation, transport and logistics.
- List and rank the hurdles to quicker design, adoption and implementations of new technologies in the industry - regulatory, financial, cultural, emotional and psychological hurdles. With special focus on (i) involving citizens and media in order to support innovation; (ii) reducing capital intensity of research and innovation, in order to boost R&D and (iii) coming back to the original philosophy of patents, where patents were a very efficient way to foster the dissemination of an innovation.
- Assess the stakeholders contributions (regional or national grants, cooperation with universities or other industries), understand how they contribute into accelerating R&D and propose ways to improve their efficiency further.

Reading materials :

- > ERA-MIN : [Research Agenda \(page 15-21\)](#)
- > McKinsey : [Are you ready for a resource revolution.pdf](#)

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