

Poster | Raw materials

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[P2] Raw Materials & Recycling

Session Chair: Mr. Johann Fischbacher (University for Continuing Education Krems, Austria), Dr. Yusuke Hirayama (AIST, Japan)

[P2-19] Promoting Sustainability in Permanent Magnets: The Role of Product Category Rules (PCR) in Rare Earth Supply Chains

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The increasing demand for rare earth permanent magnets (REPMs) used in clean energy technologies, electric vehicles, and advanced electronics, has amplified the need for standardized methodologies to assess and manage their environmental impact. As sustainability and supply chain transparency become critical concerns, Product Category Rules (PCR) provide a structured framework for conducting Life Cycle Assessments (LCAs) and developing Environmental Product Declarations (EPDs). This presentation introduces the recently developed PCR for Rare Earth (RE) Supply Chain, covering 19 products across the supply chain, including rare earth concentrates, oxides, metals, and 10 types of RE magnets. The PCR defines key methodological aspects such as system boundaries, impact categories, data quality requirements, and allocation methods, ensuring consistency and comparability in environmental assessments. A particular focus is given to allocation rules, as they significantly influence LCA results. We will also discuss the practical benefits of implementing PCR, including improved environmental reporting, regulatory compliance, and supply chain sustainability.. By providing a standardized approach, PCRs enhance transparency, reliability, and comparability in environmental declarations, supporting stakeholders in making informed decisions toward a more sustainable rare earth industry.