MateriNex

Nexus of research in Flanders for the materials of the future

Break-out session ‘Strategic & Critical Raw Materials’

Luc Van Ginneken – Innovation manager

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DEPARTEMENT ECONOMIE WETENSCHAP & INNOVATIE

Program (15h45-17h00)

Strategic & Critical Raw Materials

- Welcome: Luc Van Ginneken – MateriNex
- Keynote: Karen De Boeck (Non-Ferrous & Energy-from-Waste Supply Manager) – Veolia
- MateriNex Roadmap + Common Interest Groups (CIGs): Luc Van Ginneken – MateriNex
- Pitches:
  - Anna Matveeva – Siemens Industry Software NV / Giovanna Sauve – KU Leuven
  - Griet Lannoo – CRM Group
  - Gwenny Thomassen – Universiteit Gent/ Universiteit Antwerpen
  - Karel Van Acker – KU Leuven
  - Laurenz Schröer – Universiteit Gent
  - Mathias Chintinne – Aurubis
  - Vera Meynen – Universiteit Antwerpen
  - Wim Maervoet – Flanders Metals Valley
  - Xochitl Dominguez Benetton – VITO
- Closing remarks: Luc Van Ginneken – MateriNex

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Roadmap ‘Strategic & Critical Raw Materials’

Securing strategic raw materials supply Horizon 2024-2030	
Resources & Materials	**Processes & technologies**
Improved recycling of SRM-containing EoL products such as WEEE, PV panels, LIBs, magnets, and electrolysers. *Near-zero waste resource recovery from production waste (slags, sludges, ashes, mine tailings, waste waters).* *Enabling Flemish industry (incl. SMEs) to play an active role in the (future) European low-grade ore responsible mining activities.*	*Develop processes and technologies for a more resilient, flexible and sustainable local SRM production through improved sorting, disassembly, physicochemical pre-processing and improved (more efficient and selective) metallurgical extraction and recovery systems. Developed processes and technologies are required to be cost effective, safe and green.*

Sustainable and circular critical raw materials value chains Horizon 2024-2030	
Circularity	**Sustainability approach**
Maintain the functionality of CRM-containing products through re-use, repair, refurbish, and repurpose strategies and through direct recycling (regeneration) processes for EoL products, their components and materials (e.g. battery active materials, alloys, etc.).	*Processes and technologies allowing for decarbonization (e.g. electrification, substitution of fossil fuel based reagents, hydrogen as fuel/reagent), process intensification.* *Processes and technologies allowing for increased sustainability, i.e. “greening”, (e.g. green solvents, production waste reduction, etc.) of the recycling and CRM production industry.*

ENABLERS	
Tools and models	*Development and refinement of tools and models evaluating material stocks and flows, and the sustainability/circularity of the CRM value chain.*
Digitalization	*Several digital solutions (e.g. material passports, robotization, IoT, AI applications, Industry 5.0 and digital twins) will also make their way into the recycling and CRM production industry and should be further developed, improved, validated and implemented to support the overall sustainability goals.*
Regulation	*Focus on adopting to European and International legislations and frameworks such as the European Green Deal, the Critical Raw Material Act, the EU Battery Regulation and the Waste Shipment Regulation; and taking into account the Circular Economy Action Plan.*

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Common Interest Groups (CIGs)

- For each of the innovation themes/roadmaps
- Aim:
  - **Sharing information and insights**
  - **Presenting project results**
  - **Discussing and updating innovation roadmap**
- Participants:
  - Entitled to vote: companies and research groups of knowledge institutions
  - Advising: sector organisations, spearhead clusters, …
  - Observing: VLAIO and EWI
- 2x per year + possibly focus group(s) for deepening certain aspects
- CIG Charter
- Letters of Commitment

Common Interest Groups

- Pitches:
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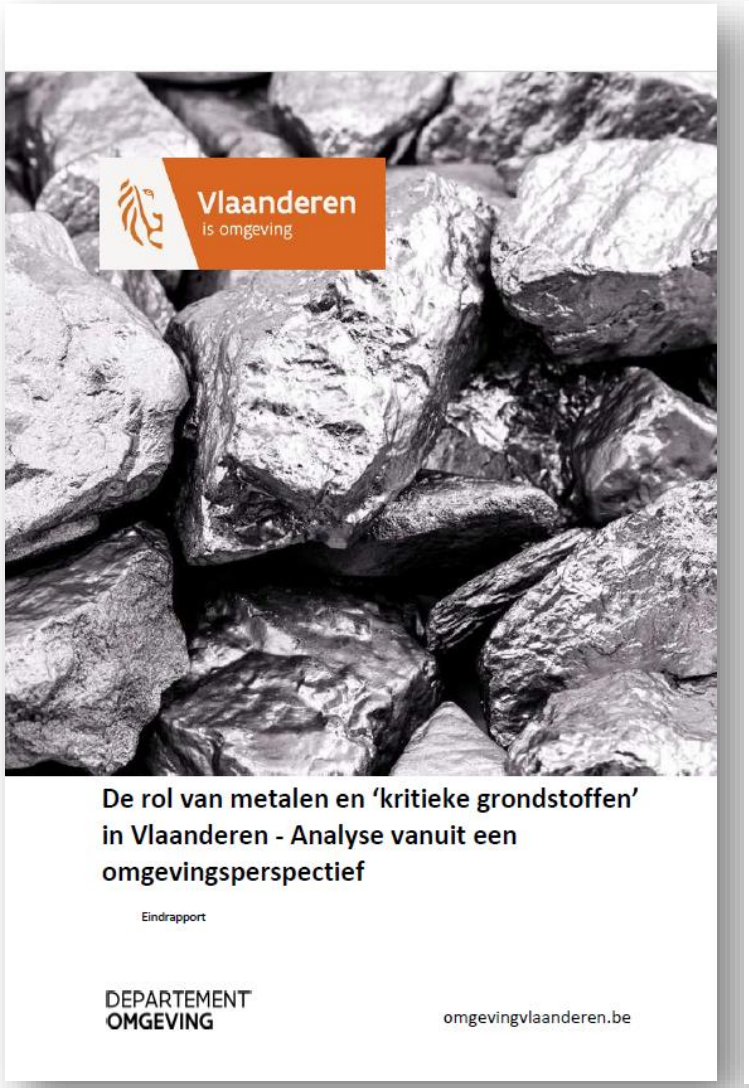

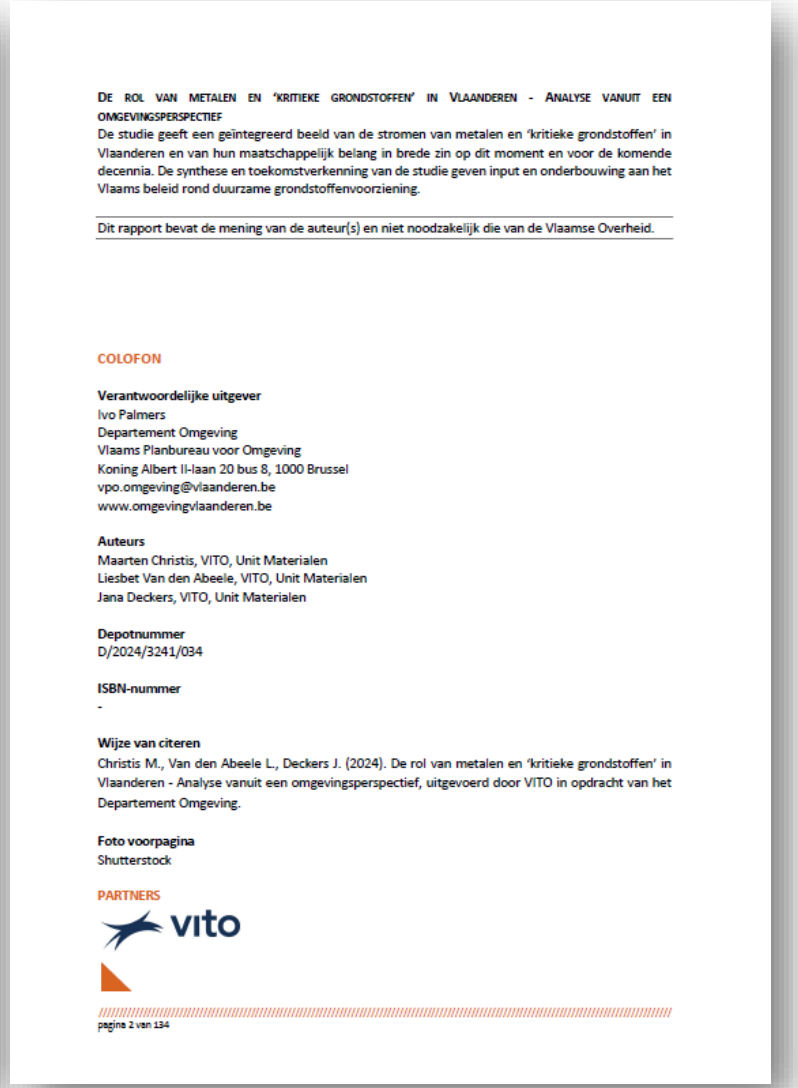

DE ROL VAN METALEN EN 'KRITIEKE GRONDSTOFFEN' IN VLAANDEREN - ANALYSE VANUIT EEN OMGEVINGSPERSPECTIEF

De studie geeft een geïntegreerd beeld van de stromen van metalen en 'kritieke grondstoffen' in Vlaanderen en van hun maatschappelijk belang in brede zin op dit moment en voor de komende decennia. De synthese en toekomstverkenning van de studie geven input en onderbouwing aan het Vlaams beleid rond duurzame grondstoffenvoorziening.

Dit rapport bevat de mening van de auteur(s) en niet noodzakelijk die van de Vlaamse Overheid.

COLOFON

Verantwoordelijke uitgever
Ivo Palmers
Departement Omgeving
Vlaams Planbureau voor Omgeving
Koning Albert II-laan 20 bus 8, 1000 Brussel
vpo.omgeving@vlaanderen.be
www.omgevingvlaanderen.be

Auteurs
Maarten Christis, VITO, Unit Materialen
Liesbet Van den Abeele, VITO, Unit Materialen
Jana Deckers, VITO, Unit Materialen

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PARTNERS

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Studie in opdracht van Departement Omgeving – Vlaams Planbureau voor Omgeving (VPO)

Studie:
https://archief.algemeen.omgeving.vlaanderen.be/xmlui/bitstream/handle/acd/1027309/VPO_kritieke_grondstoffen_rapport_final.pdf

Webinar:
https://www.friscris.be/nl/publications/de-rol-van-metalen-en-kritieke-grondstoffen-in-vlaanderen--analyse-vanuit-een-omgevingsperspectief(bfad997a-a036-481e-90a8-69dbd59d7d55).html
https://www.youtube.com/watch?v=QHfUBPSk6WU

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Bezoekadres/Visiting address:
Roderveldlaan 5
2600 Berchem, 1st verdieping/floor
https://materinex.be
info@materinex.be

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