

MINERAL RECYCLING FORUM 2019

Radisson Blu Hotel, Kraków, 4-6 March 2019







Secondary raw material sources, supply, processing & markets





















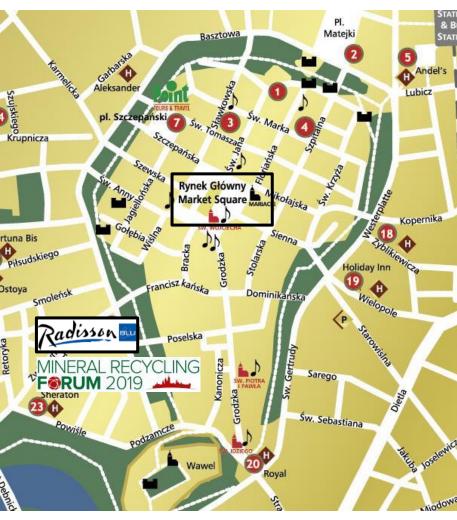
IMF®RMED Welcomes you to Kraków













Radisson Blu Hotel, Kraków, 4-6 March 2019

Exhibitors





Supporting Partners









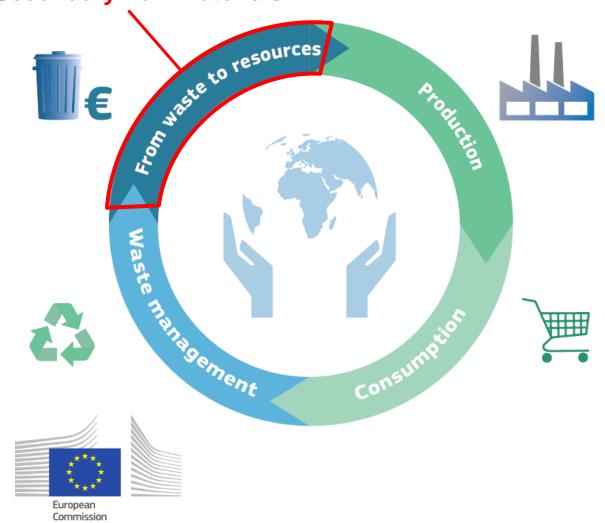






Moving towards a circular economy – "Closing the loop"

Secondary Raw Materials

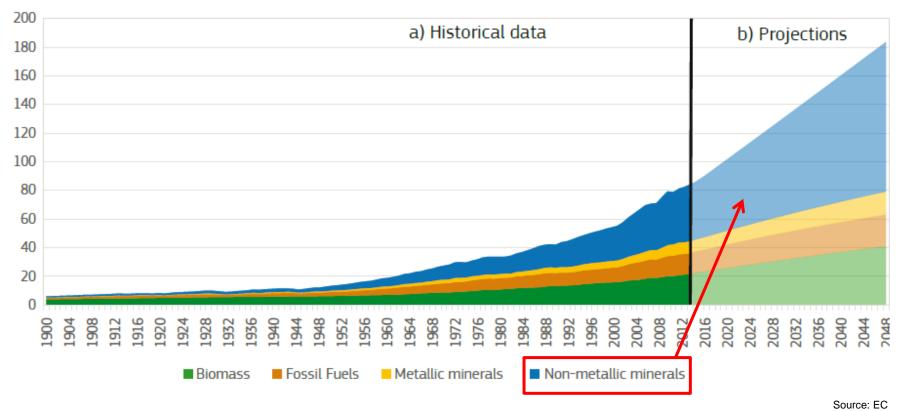


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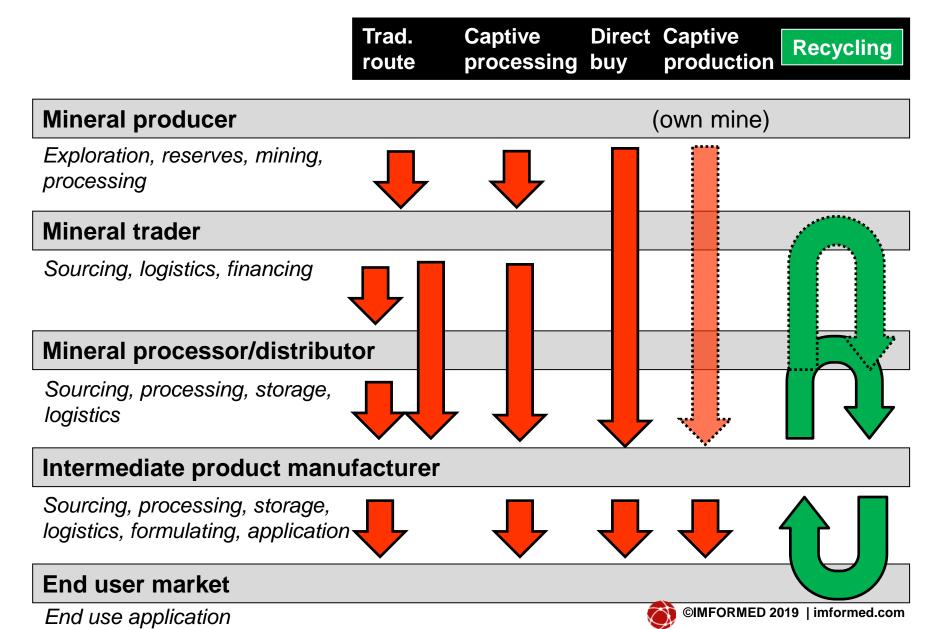
Moving towards a circular economy – "Closing the loop"



Figure 2: Global material extraction by resource type: a) historical (world, 1900-2015) and b) projected data (world, 2015-2050)¹⁰.



Supply chain options





Secondary Raw Materials (SRM) for industrial mineral markets Some examples

SRM source*	SRM recovered	Market				
Aluminium salt slag	alumina	cement; ceramics; geopolymers; metallurgy; mineral wool; refractories;				
Batteries	graphite; lithium; manganese dioxide	batteries; ceramics; chemicals; glass; refractories				
Fly ash	aluminosilicate	ceramics; coatings; construction; foundry; plastics; proppants (oil & gas drilling)				
Glass	REE; silica	abrasives; chemicals; coatings; concrete; glass; plastics; sealants				
Gypsum wallboard	gypsum	wallboard				
Refractories	alumina; andalusite; bauxite; chromite; dolomite; mag-carbon; graphite; magnesia; silicon carbide; zirconia	ceramics; metallurgy; refractories				
Steel slag	alumina; calcia; magnesia; silica	abrasives; aggregate; cement; concrete; fertiliser; filtration; metallurgy				
Waste water	phosphorus	fertiliser				
WEEE**	antimony trioxide; bromine FR; fluorspar; graphite; REE	batteries; ceramics; chemicals; flame retardants				

^{*} ie. waste from processing, or used/discarded mineral-bearing end products to be recycled



^{**} waste electrical and electronic equipment

Mineral recycling drivers

- Environmentally driven legal requirements national/regional
- Conservation of primary mineral resources by use of recycled materials

Alleviates mineral resource squeeze, their "criticality", dependence on

certain countries, eg. China (more later)

- Mineral price rises
- Recycling contributes to CO₂ reduction
- Conservation of energy
- Controls hazardous substances
- Reduces landfill cost and pressure
- · Technological advances in processing
- Employment opportunities





Outlook: Challenges

 Sourcing adequate supply of waste material: waste source becomes the new "mineral resource"

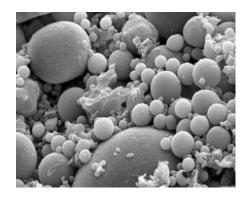


- Assurance of long term supply of consistent quality of SRM
- Management by the recycling company of balance between continuous and discontinuous flows of waste material against supply of recycled material flow to end users
- Permits/legislation in handling/treating waste material: clarity, consistency, across country borders

Outlook: Opportunities

- Development of new product formulations to enhance/ease SRM use and ultimate recyclability
 - Added value product development for more diverse market applications
 - Increasing long term strategic alliances between waste sources, recyclers, and end users
 - Education of end users to positively engage in and recognise benefits of recycling;
 employment, better for environment





Programme – Tuesday Morning

KEYNOTE OVERVIEWS

- 08.45 Introduction
 Ismene Clarke, Director & Mike O'Driscoll, Director, IMFORMED, UK
- O9.00 Competitive manufacturing industries in Europe: circular economy and access to raw materials

 Maria Nyberg, Policy Officer, European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, C.2 Resource Efficiency and Raw Materials, Belgium
- 09.30 Recycling as a way of developing new business models for the minerals sector: regulatory bottlenecks and opportunities

 Francesca Girardi, Industrial Affairs Advisor, IMA-Europe, Belgium

10.00 COFFEE

STRATEGY & DEVELOPMENT

- 11.00 Strategy for companies aiming to participate in mineral recycling and the Circular Economy

 Bart Mantels, Program Manager Sustainable Materials Management, VITO NV, Belgium
- 11.30 Decoupling geology from geography: connecting market and minerals with hydrometallurgical processing of waste
 Mark Tilley, Vice President Business Development, Lixivia Inc., USA





Programme – Tuesday afternoon

REFRACTORY RECYCLING | PROCESSING

- 14.00 The driving force of recycling in the refractory industry Paul Glaubitz, General Manager Recycling, RHI Magnesita, the Netherlands
- 14.30 From best practices to excellence in refractory waste management David Maza, R&D – Process Manager, Sidenor, Spain
- 15.00 Roller press briquetting and granulation to turn fines into valuable materials

 Patrick Lecherf, Export Manager, Euragglo, France
- 15.30 Panel discussion & Round-up

16.00 COFFEE & CLOSE OF DAY 1



Programme – Wednesday Morning

INDUSTRIAL & MINING WASTE RECYCLING

- 09.00 Opportunities and challenges in the use of bauxite residue (red mud) Ken Evans, Independent Consultant, UK & George Banvolgyi, Technical Director, Bán-Völgy Ltd Partnership, Hungary
- 09.30 Recycling of wastes from the mining, power and metallurgy industries
 Prof. Krzysztof Galos, Director, Mineral and Energy Economy Research
 Institute, Polish Academy of Sciences, Poland
- 10.00 Opportunities in turning waste into geopolymer based construction materials

 Juha Pinomaa, Chairman, Betolar Ltd, Finland

10.30 COFFEE

CHEMICAL WASTE & SLAG RECYCLING

- 11.15 Recovery of magnesia and chromia from chemical waste Duane Runciman, Wastes Ecotech Srl, Romania
- 11.45 Trends & outlook for the ferrous and nonferrous slag markets
 Daniel Rogers, Head of Market Reports and Consultancy, Smithers, UK

12.15 LUNCH & CLOSE OF CONFERENCE





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Attending Companies



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Betolar Ltd

Calderys

Carborundum Universal Ltd

Cofermin Rohstoffe GmbH & Co. KG

Euragglo

European Commission

Global Recycling

Górka Cement Sp. Zo.o

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IMFORMED Ltd

Lhoist Germany Rheinkalk GmbH

Lixivia Inc

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Mineralmahlwerk Westerwald Horn GmbH

PK Rohstoffe GmbH

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Port of Rotterdam Authority

Possehl Erzkontor GmbH & Co. KG

Quarzwerke GmbH

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Resitec AS

RHI Magnesita

Richmond Reclamation

RUSAL

Saint-Gobain SEPR

Sidenor

Smithers Apex

TRB

TYMO Engineering GmbH

Vesuvius GmbH

Vesuvius Group

VITO NV

Wastes Ecotech Srl

Zaklady Magnezytowe Ropczyce SA

MINERAL RECYCLING FORUM 2019 Picture Gallery MINERAL RECY FORUM 2019 eur SUPPORTING PARTI MEI MEI RECYCLING 2019 Ei @ O SMITHERS FORUM 2019 E ME **IMF®RME**



Well thought and linked programme, relevant topics covered, smooth and well organised.

Naman Patel, Partner, Global Recycling, India

Excellent programme; time to connect between sessions is really valuable, the longer breaks are good!

Susanne Hiden, Recycling Specialist, RHI Magnesita, Austria

Well organised event and good content, interesting overall forum for our area. Well done! The app is a great start.

Duane Runciman, Partner, Wastes EcoTech, Romania

Well arranged agenda, with long coffee breaks which allow networking. App is very good idea.

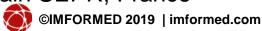
Alex Aizpurua, Director Raw Materials, Midegasa, Spain

Excellent organisation as ever. Good programme and nice place close to city centre.

Hugo du Mez, Advisor, Port of Rotterdam, the Netherlands

Very well organised and very interesting presentations, very helpful app.

Jean-Marie Detalle, WorldWide Market Manager, Saint-Gobain SEPR, France







Networking and knowledge for the industrial minerals business







- Launched in January 2015
- Extensive experience & reputation
- Specialising in conferences & market research in:
 - Magnesia
 - > Refractory Minerals
 - > China
 - Mineral Recycling
 - > Fluorine
 - > India
 - Oilfield Minerals

Coming up in 2019



8-10 April 2019

MAGFORUM 2019

Magnesium Minerals & Markets Conference Occidental Bilbao, 13-15 May 2019

OILFIELD MINERALS & MARKETS FORUM HOUSTON 2019

Hilton Houston Post Oak, Houston, 10-12 June 2019

FLUORINE FORUM 2019

Alcron Hotel, Prague 21-23 October 2019

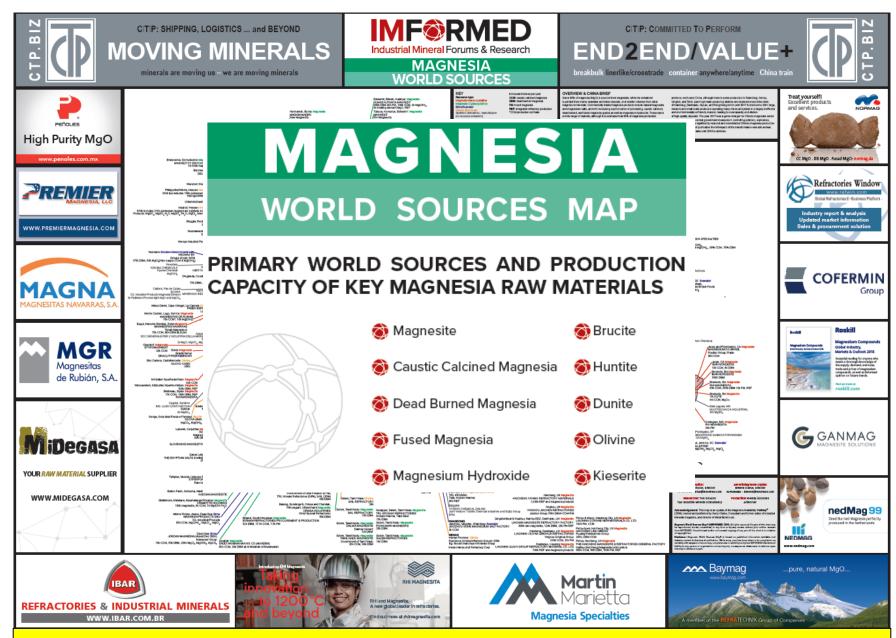


INDIAN MINERALS & MARKETS FORUM 2019

JW Marriott Mumbai Juhu, 18-20 November 2019 (Field Trip 21-22 November 2019)



Sponsorship & Exhibit Opportunities







PRIMARY WORLD SOURCES & PRODUCTION CAPACITY OF KEY REFRACTORY MINERALS

PICK UP A COPY AT OUR STAND

KEY - see notes below

ALUMINA

FUSED ALUMINA

ANDALUSITE

BAUXITE

CHROMITE

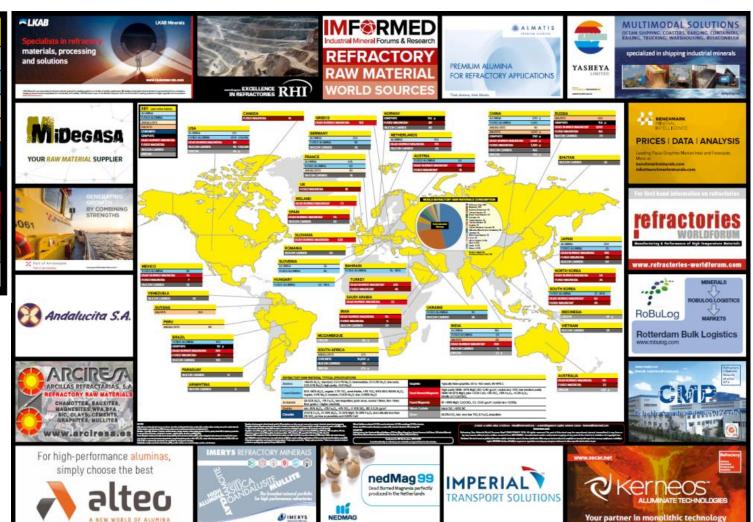
GRAPHITE

DEAD BURNED MAGNESIA

FUSED MAGNESIA

SILICON CARBIDE

ZIRCON









AT A GLANCE
A-Z GUIDE
WHICH MINERALS
FOR WHICH
MARKETS

												KETS																
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- Leading industrial minerals
- Main raw material feedstock
- Key specified chemical component
- World production
- Main source countries
- Leading consuming markets

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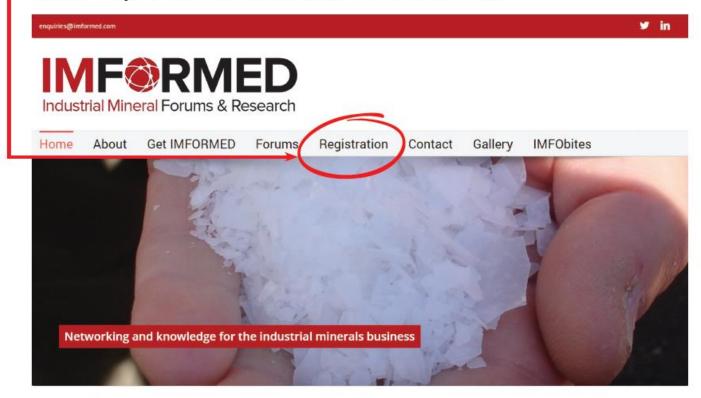








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MINERAL RECYCLING FORUM 2019

Radisson Blu Hotel, Kraków, 4-6 March 2019

Participate Learn Enjoy

