

SUMMARY SLIDE DECK

MINERAL RECYCLING **FORUM** 2021

Tuesday 9 February 2021

ONLINE



The networking and knowledge hub for the industrial mineral recycling business

Supporting Partners



PROGRAMME*

GMT	CET+1	EDT-5	SGT+8	PRESENTATIONS
12:00	13:00	07:00	20:00	Welcome & Introduction Ismene Clarke & Mike O'Driscoll, Directors, IMFORMED
12:15	13:15	07:15	20:15	Critical raw materials resilience: charting a path towards greater security and sustainability –increased circularity and efficient use of resources Maria Nyberg, Policy Officer, EC, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Belgium
12:30	13:30	07:30	20:30	EcoGraf: Closing the Carbon Loop in Li-ion batteries Andrew Spinks, Managing Director, EcoGraf Ltd, Australia
12:45	13:45	7:45	20:45	DISCUSSION
13:00	14:00	08:00	21:00	BREAK
13:15	14:15	08:15	21:15	South Korea's refractory recycling status & key challenges to address Joo Yongdon, CEO, Korea Material Co. Ltd, South Korea & Sangpil Raul Hwang, Industrial Minerals Trader, Sojitz Corp., Japan
13:30	14:30	08:30	21:30	Requirements for implementing Circular Economy in the refractory waste management of a steel plant Aintzane Soto, R&D Process Engineer, Sidenor, Spain
13:45	14:45	08:45	21:45	Refractory recycling developments Wilker Felipe Silva, Refractory Purchasing Manager, ArcelorMittal Brazil, Brazil
14:00	15:00	09:00	22:00	DISCUSSION
14:15	15:15	09:15	22:15	BREAK

14:30	15:30	09:30	22:30	ENSUREAL – Pedersen Process Revisited: Changing the colour of alumina production Dr David Konlechner, Owner, KON Chemical Solutions e.U, Austria
14:45	15:45	09:45	22:45	Mineral waste streams in ceramic construction products: Potential & limitation Carl Sorrell, Vice President, IntoCeramics, OPF Enterprises LLC, USA
15:00	16:00	10:00	23:00	Reclamation & repurposing tailings as a source of low-risk MgO supply for construction market J. Michael Sullivan President & CEO, BAIE Minerals Inc., Canada
15:15	16:15	10:15	23:15	Use of LIBS in recycling and in steel, refractory and mining industry Amit Ahsan, Sales Engineer, SECOPTA analytics GmbH, Germany
15:30	16:30	10:30	23:30	DISCUSSION
15:45	16:45	10:45	23:45	ROUNDTABLE BREAKOUT: 1. Refractory Recycling 2. Sorting & Other Challenges in Mineral Recycling
16:30	17:30	11:30	00:30	Close of Forum





ALFRAN
Almatis GmbH
ArcelorMittal Brasil
Baie Minerals Inc
Calderys Italia S.r.l
Deref Spa
EcoGraf Ltd
Eggerding
European Commission
FUSP
HarbisonWalker International
Horn & Co Group
Hydro Aluminium AS
Imerys
IntoCeramics
JSW Steel Ltd
Kon Chemical Solutions
Korea Material Co.
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PRCO America
Quarzwerke GmbH
REF Minerals
Refractories WorldForum
Refratechnik Holding GmbH
RHI Magnesita
Roskill Information Services
Saint-Gobain
SCR-Sibelco
SECOPTA Analytics GmbH
Sidenor
Sojitz Corp.
SSAB
TAK Industrial Minerals Consultancy
University of Koblenz-Landau
Vesuvius
Wuhan University of Science & Technology

This would be difficult to improve on. You had steel producers, refractory producers, new technology developers, academics, government officials and experts presenting and sharing current info on very relevant real time topics. Well done!

Bill Porter, National Manager USA & Canada, PRCO America, USA

Really enjoyed the session and was very well hosted.

Andrew Spinks, Managing Director, EcoGraf Ltd, Australia

Congratulations, it was a very well organised and good Forum. The roundtable session was a very good idea.

Werner Odreitz, Managing Director, REF Minerals GmbH, Germany

The forum is an excellent tool to promote recycling/circular economy

Karin Scharrer, Editor, Refractories WorldForum, Germany

It was an eye-opening experience and I got to “meet” a lot of interesting people who bring their unique value to the industrial mineral industry.

Sangpil Raul Hwang, Industrial Minerals Trader, Sojitz Corp., Japan



New era of mineral exploration, sourcing, & development

- Inevitable development spotlighted
& advanced by the pandemic
 - = Mineral sourcing strategy rethink
 - = Accelerated mineral recycling





New era of mineral recycling

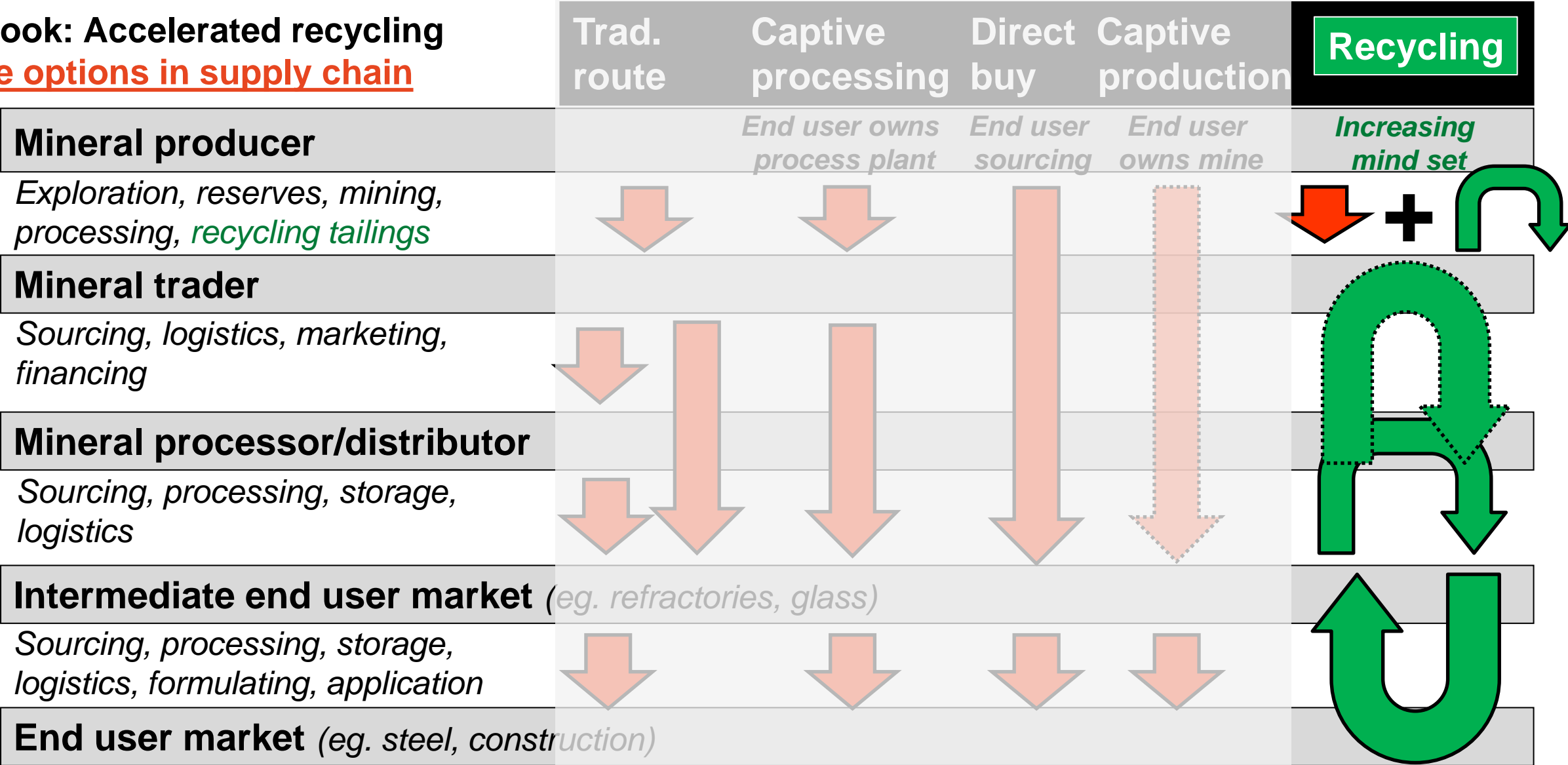
Primary drivers: “Rule of Six”

1. **Limited primary sources:** shortage of commercially developed “critical” mineral resources and processing plants
2. **Source overreliance:** risky overreliance on supply/trade from limited overseas source
3. **China in change:** supply issues, range of factors.
4. **Emergence of hi-tech growth markets:** to become mainstream, particularly in the energy sector (eg. Li-ion batteries, EVs, solar, wind), and thus demand for respective critical minerals (eg. lithium, graphite, rare earths).
5. **Recycling technology more economic/established:** from esoteric, expensive sideshow, to mainstream processing line; opportunities sensed and sought after
6. **Environment:** saving the environment, drive for the “Circular Economy” gathering momentum



New era of mineral recycling

Outlook: Accelerated recycling
More options in supply chain





New era of mineral recycling

Outlook: Accelerated mineral recycling

- **Drivers:**
 - alternative mineral source
 - cutting costs (from waste disposal)
 - move to develop Circular Economy to protect environment
 - **provides mineral suppliers and mineral consumers with “green” portfolio**
- **“New normal”:** Recycled raw materials will become a “normal” supply chain option for mineral buyers
- **Challenges remain:**
 - eg. competitive pricing; grade quality; advanced sorting techniques; development & investment processing tech.; harmonisation of waste handling/permitting; “education” of industry and ridding of stigma of recycled material as “contaminated”*
- **Opportunities** to process minerals from waste, develop & supply sorting technology & equipment
- **Economic alliances** increasing between waste sources (end users) + recyclers, new logistic chains
- **Supply chain co-operation** in modifying end product formulations to ease end-of-life recyclability



Red mud from bauxite processing subject to much R&D in recycling



REFRACTORY MINERALS FORUM 2021

16-17 March 2021

ONLINE



Global trends & outlook in supply & demand for refractory raw materials & markets

Global Outlook	Carol Jackson, <i>President, WRA & CEO, HarbisonWalker</i>
Refractory futures	Dr Richard Flook, <i>Managing Director, Mosman Resources</i>
India	Sameer Nagpal, <i>CEO, Dalmia-OCL</i>
China	Vincent Wong, <i>Market Analyst, Refractories Window</i>
Dolomite	Thomas Frömmer, <i>Senior VP Mining, RHI Magnesita</i>
Andalusite	Dirk Auge, <i>Sales Manager, Cofermin Rohstoffe</i>
Bauxite	Ted Dickson, <i>TAK Industrial Mineral Consultancy</i>
Guyana bauxite	John Karson, <i>VP Sales and Marketing, First Bauxite</i>
Graphite	George Miller, <i>Analyst, Benchmark Mineral Intelligence</i>
Chromite	Dr Nils Backeberg, <i>Manager Steel Alloys, Roskill</i>
Magnesia	Mike O'Driscoll, <i>Director, INFORMED</i>

IMFORMED ONLINE

Rendezvous

Wed 14 April 2021

SUPPLY  PROCESSING  LOGISTICS  MARKETS

For established players seeking new horizons & newcomers evaluating industrial minerals

Lead Sponsors



Future trends & developments in port logistics

Pim Steenhuis, Commercial Manager Dry Bulk, Port of Amsterdam

CO₂ reduction challenges & opportunities

Aurela Shtiza, Director Industrial Affairs & Raw Materials, IMA-Europe

How will strategic minerals ride the next economic cycle?

Neal Brewster, Chief Economist, Roskill

The security of critical mineral supply chains

Dr Steven Fortier, Director, National Minerals Information Center USGS

Understanding the geopolitics of critical minerals

Jack Lifton, Director, Critical Minerals Policy Institute & Ken Santini, Managing Director, Santini & Associates

Creating reference & benchmark pricing for lithium

Simon Moores, Managing Director, Benchmark Mineral Intelligence

Transforming strategy into cash in the industrial mineral sector

Miguel Galindo, Managing Director, Strateg-On

Improved performance of grinding systems

Andreas Henssen, Product Manager Classifiers, Neuman & Esser

Energy conservation in ultrafine industrial mineral processing

Dietmar Alber, Business Development Director, Hosokawa Alpine AG

Wrap-Up + BREAKOUT ROUNDTABLE SESSION

EARLY BIRD RATE ENDS FRIDAY 5 MARCH – BOOK NOW!

REFRACTORY MINERALS **FORUM 2021**

16-17 March 2021

ONLINE



OILFIELD MINERALS & MARKETS **FORUM 2021**

Wed 26-Thu 27 May 2021

ONLINE



FLUORINE **FORUM 2021**

Pan Pacific Hanoi

18-20 October 2021



INFORMED **ONLINE** *Rendezvous*

13-14 April 2021

SUPPLY  PROCESSING  LOGISTICS  MARKETS

MAGFORUM 2021



Magnesium Minerals & Markets Conference
Grand Hotel Huis ter Duin (Noordwijk),
Amsterdam — 28-30 June 2021

CHINA REFRACTORY MINERALS **FORUM 2021**

InterContinental Dalian

25-27 October 2021





- **Launched in January 2015**
- **Extensive experience & reputation**
- **Specialising in conferences & market research in:**
 - **Industrial Minerals Supply/Demand**
 - **Magnesia**
 - **Refractory Minerals**
 - **China**
 - **Mineral Recycling**
 - **Fluorine**
 - **India**
 - **Oilfield Minerals**