



re-sourcing

Disruptions to Responsible Sourcing: The Good, The Bad and The Ugly

RE-SOURCING Project - Virtual Event
9 October 2020, 10:00 – 13:30 CEST



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 869276

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Session 1: The RE-SOURCING Project – Transitioning Business Practices

Objectives:

- Overview and stock-taking of responsible sourcing, incl. challenges in practice
- RE-SOURCING project approach and how we respond to challenges
- Importance of the project to EC and their policy machinery
- Introduction to 3 sectors (renewables, mobility, electronic equipment)
- Input and feedback from participants



Responsible Sourcing – Mind the Gap!

Overview of the current state of play within mineral supply chains



Masuma Farooki

MineHutte



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Responsible Sourcing Mind the Gap!

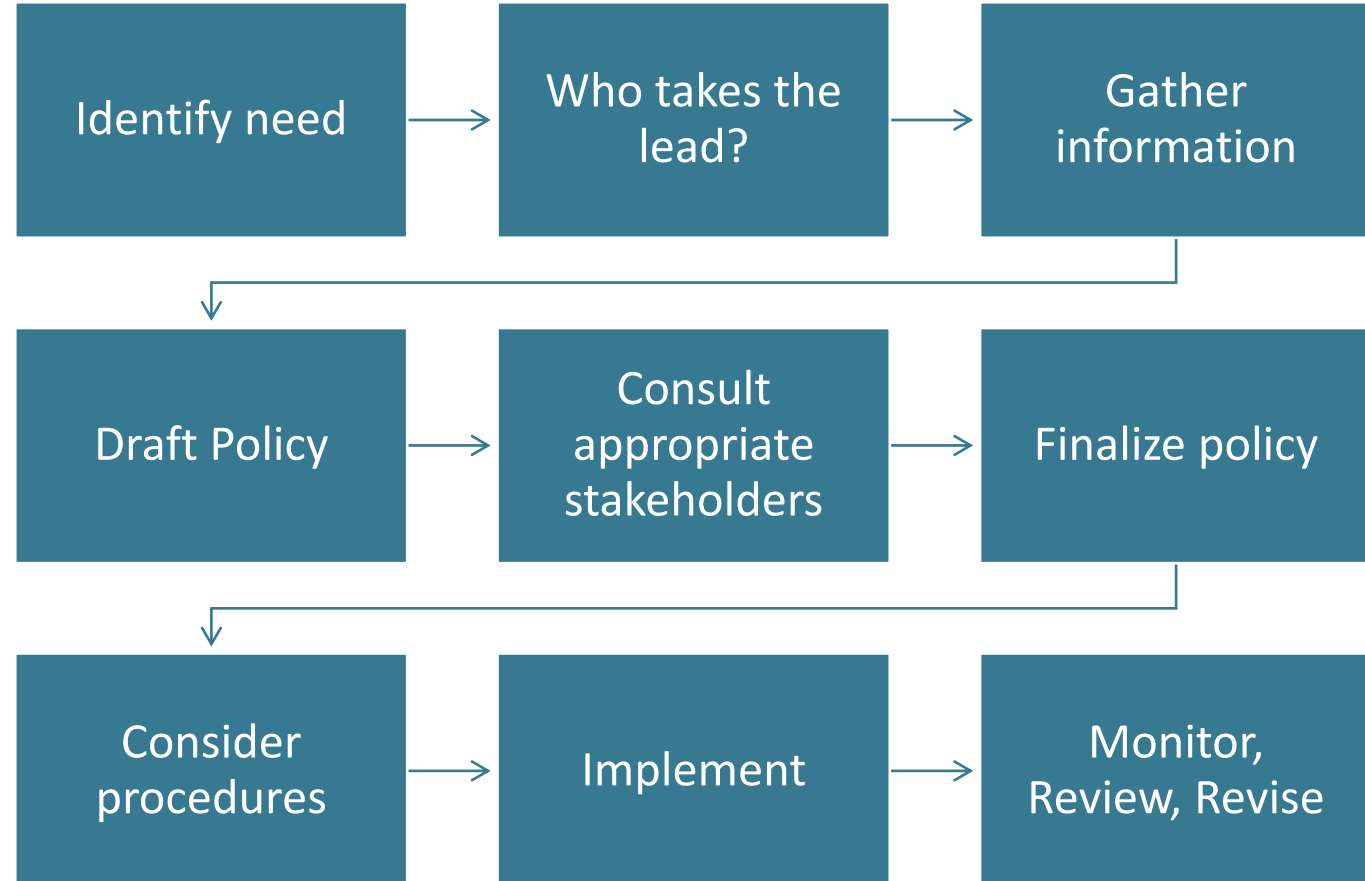
Dr. Masuma Farooki

Consulting Director (MineHutte)



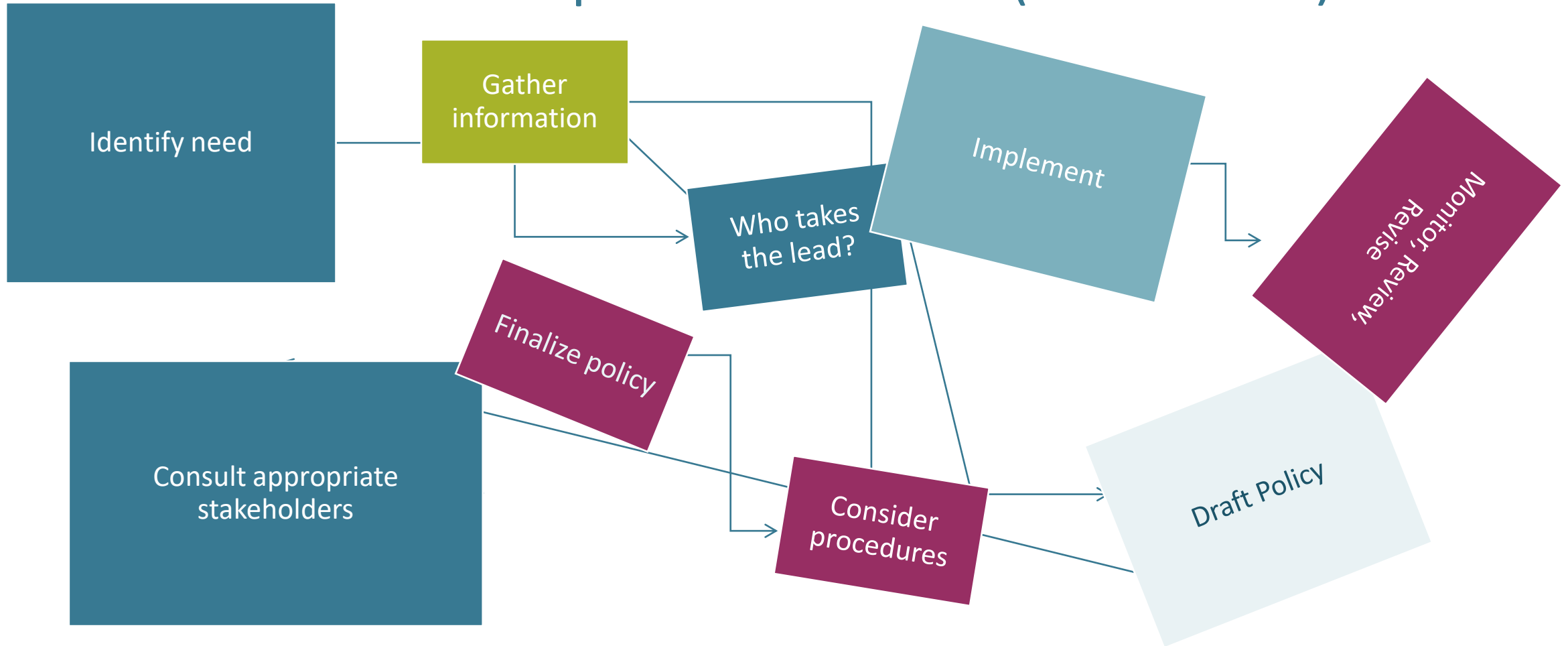
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Concept to Realisation (Concept)



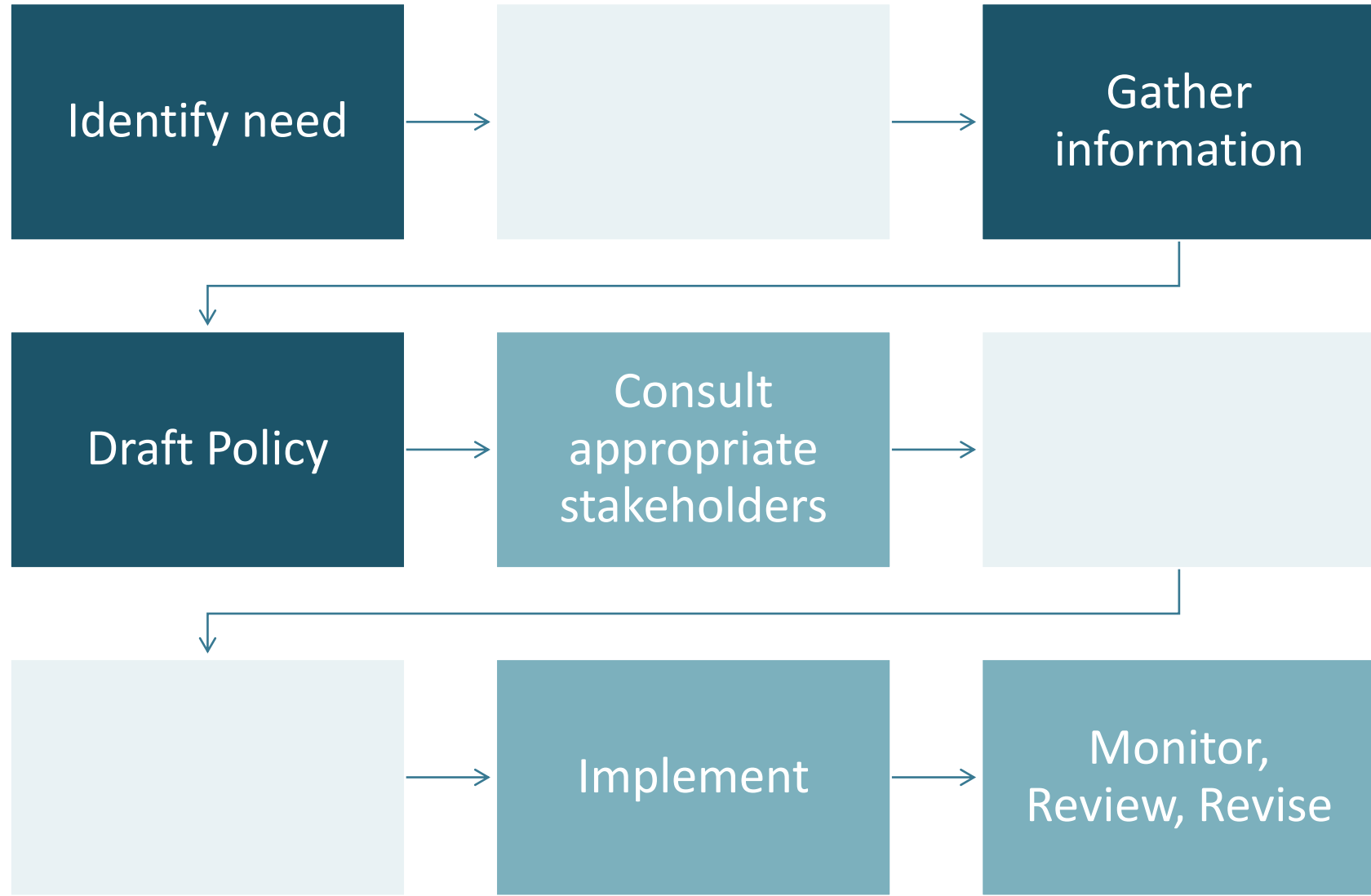


Concept to Realisation (Realisation)





Significant
Progress
Made





Significant Progress Made

Needs identification

The SDGs & the ESGs

- *People & Society*
- *Planet & Conservation*
- *Profit & Development*

Consult appropriate stakeholders

- *Communities*
- *Consumers*
- *Investors ??*
- *Companies??*

Gather information

- *Case studies*
- *On-site projects*
- *Consultations*

Draft policies

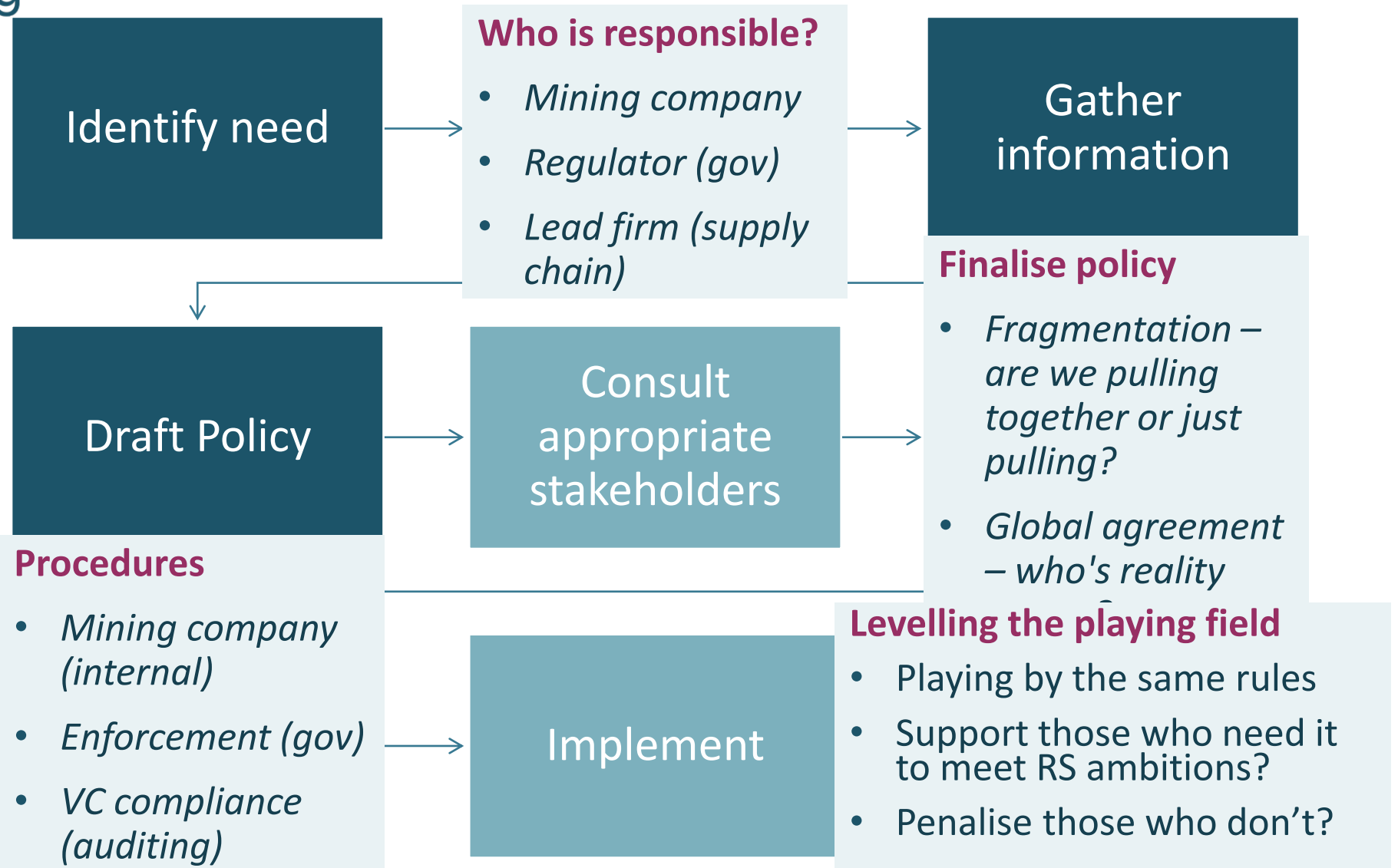
- *Governments & institutions*
- *OECD*
- *EU conflict minerals*
- *ICMM/RMI/LME*

Implement

- *Principles (UN, ICMM)*
- *Guidelines (OECD, RMI)*
- *Strategy (Blockchain, SAPS)*
- *Compliance (LME, EU conflict minerals, Sx regulations)*

Monitor, Review & Revise

- *Reporting (GRI)*
- *Certification*
- *Auditing*





The Gap?

- Who really cares – the Supply & Demand balance
- What constitutes as Responsible Sourcing beyond the OECD Due Diligence Approach?
- How do you get to a Level playing field within Responsible Sourcing?
- Does responsible sourcing provide a competitive edge or is it the cost of doing business?

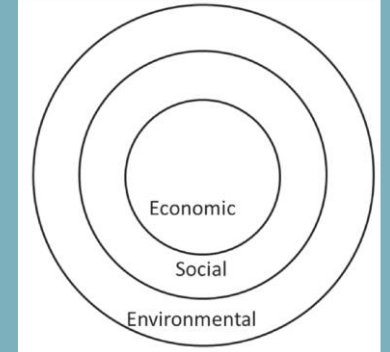
Key areas the need addressing:

- Assurance process
- Regulatory process
- Homogenisation of responsible sourcing processes
- Wider uptake of responsible sourcing practices



Responsible Sourcing Approaches will continue to evolve:

- By Firm
- By Sector
- By Geography



Source: Tost et.al (2018)



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THANK YOU
for your attention!



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Masuma Farooki

MineHutte

London (UK)

Masuma.Farooki@minehutte.com

Coordinated by:
Vienna University of Economics and Business,
Institute for Managing Sustainability
Welthandelsplatz 1A
1020 Vienna
Phone: +43-1-31336-5452
Email: info@re-sourcing.eu

www.re-sourcing.eu



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Introducing the RE-SOURCING Project

Scope, Goals & Aspirations



Andreas Endl

Vienna University for Economics and Business (WU)



RE-SOURCING

A Global Stakeholder Platform for Responsible Sourcing
Scope, Goals & Aspirations

Andreas Endl

Vienna University of Economics and Business,
Institute for Managing Sustainability

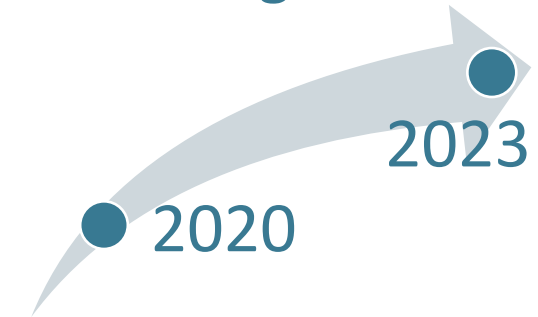
“Building a Global Stakeholder Platform for Responsible Sourcing”

EC project



- Diverse set of expertise & stakeholder representation
- **Balanced view**, but responding to important **societal challenges**
- **Independent & open dialogue**

Running from



“a facilitator for the agenda on Responsible Sourcing”



Our Goals

- Establish common Responsible Sourcing (RS) visions for EU industry
- Increase uptake of RS practices by business & public policy
- Foster global advocacy for a common definition of RS
- Build a well-connected & diverse global RS community



Establish common Responsible Sourcing visions for EU industry

➤ Roadmaps for Responsible Sourcing in three key EU industry sectors

Be a part of the vision...

Upstream &
downstream

Stakeholder
driven

Response
to Climate
Change &
SDGs



Renewable
Energy
Roadmap
Workshop,
29 Oct. 2020



Increase uptake of RS Practices by business & public policy

➤ Guidance & learning for practitioners on how to implement good practice



- Unique & Informal expert exchange

➤ Flagship Case Labs: Workshops & Webinars



- Objective examination of practice & How to?

➤ Good Practice “Manuals”



- Framework conditions

➤ Contextualise Roadmap for uptake



Foster global advocacy for a common definition of RS

➤ Contextualise EU Responsible Sourcing globally



- **Global Advocacy Fora events in three world regions**
- **Advancing a global definition of RS**
- **Support international RS Agenda setting (OECD, UN etc.)**



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Build a well-connected & diverse global RS community

User-friendly
online
knowledge
repository



Structured
Discourse

RE-SOURCING
Platform

Awareness
&
Momentum

Networking
&
Exchange



2 Digital and
2 physical
conferences
& many
more
webinars

Opening
Conference
18-19 Jan
2021

Innovative story-telling
& webcasts





re sourcing

Thank you &

Welcome to RE-SOURCING



Coc
Vie
Inst
Welthandelsplatz 1A
1020 Vienna
Phone: +43-1-31336-5452
Email: info@re-sourcing.eu

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The importance of Responsible Sourcing in light of recent policy developments



Debby De Roover

DG GROW



The importance of responsible sourcing in light of recent policy developments

Disruptions to Responsible Sourcing, 9 October 2020

Debby De Roover

DG GROW, European Commission

The 2020 criticality assessment identifies 30 raw materials as critical

2020 Critical Raw Materials (new as compared to 2017 in bold)		
Antimony	Hafnium	Phosphorus
Baryte	Heavy Rare Earth Elements	Scandium
Beryllium	Light Rare Earth Elements	Silicon metal
Bismuth	Indium	Tantalum
Borate	Magnesium	Tungsten
Cobalt	Natural Graphite	Vanadium
Coking Coal	Natural Rubber	Bauxite
Fluorspar	Niobium	Lithium
Gallium	Platinum Group Metals	Titanium
Germanium	Phosphate rock	Strontium

Action Plan on Critical Raw Materials



10 actions to ensure Europe's access to raw materials

Diversified sourcing from third countries

9. Develop strategic **international partnerships** and associated funding to secure a diversified supply of sustainable critical raw materials, including through undistorted trade and investment conditions
 - Pilot partnerships with **Canada**, interested countries in **Africa** and the EU's **neighbourhood** planned for 2021
10. Promote **responsible mining practices** for critical raw materials through the EU regulatory framework and relevant international cooperation

10 actions to ensure Europe's access to raw materials

Resilient value chains for EU industrial ecosystems

1. Launch an industry-driven **European Raw Materials Alliance**, initially to build resilience and open strategic autonomy for the rare earths and magnets value chain, before extending to other raw material areas
 - Bring together industrial actors along the value chain, Member States, regions and civil society
 - To be launched on 29 September 2020

EUROPEAN
RAW MATERIALS
ALLIANCE

ERMA

Thank you for your attention!

- Critical Raw Materials Communication (COM(2020) 474 final), containing 2020 EU Critical Raw Materials List and the EU Action Plan for CRM:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0474&from=EN>

- European Raw Materials Alliance website of EIT RawMaterials:

<https://erma.eu/>

- Critical Raw Materials for Strategic Technologies and Sectors in the EU - A Foresight Study:

<https://ec.europa.eu/docsroom/documents/42882>

- European Commission webpage on Critical Raw Materials:

https://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_en

The Renewable Energy Sector & Responsible Sourcing

State of Play



Marie-Theres Kügerl
Montanuniversität Leoben (MUL)



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State of Play

The Renewable Energy Sector & Responsible Sourcing

Marie-Theres Kügerl
Montanuniversität Leoben



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Introduction



- Wind Energy
 - Solar PV Energy
- ↑ +23% & +36.5%
- Copper, Rare Earth Elements, Silicon
 - Manufacturing
 - Collection & Treatment

¹ Growth rate of wind and solar energy in 2018 (IEA, 2020)



Narrative Analysis - Methodology

- Online discourse on
 - Responsible sourcing
 - Renewables
 - Mining
- Strong & meaningful narratives
 - Desk research, Google Trends, Expert consultations, ...
 - 40 narratives for RS
 - 20 narratives for RES



Narrative Analysis - Results

- Issues well reflected in media
- Many “timeless” narratives
- Responsible Sourcing
- Sustainability
 - Raw materials
 - Wind & solar energy
- More investment in certain areas



Source: Significance Systems



Challenges

- Human rights violations
 - ASM vs LSM
 - Indigenous people rights
 - Land rights, etc.
- Environmental impact
- Health & Safety
- Collection & Treatment

Standards & Initiatives

- IRMA
- ICMM
- OECD
- EITI
- IFC EHS Guidelines
- The Copper Mark
- WEEE Directive
-



Gap Analysis

- International Frameworks
 - Mining
 - Manufacturing
 - Collection & Treatment
- Environmental sustainability
- Resource Efficiency





What's next?

- State of Play and Roadmap Process Report
- Workshop
- Expert Consultations
- Flagship Cases

Roadmap Workshop

Responsible sourcing in the renewable energy supply chain – a reality or still a long way to go?

29 October 2020, 13:00-17:00 CET

Our focus will be on:

- mining & processing of copper, rare earth elements, and silicon
- manufacturing and recycling of wind turbines and solar panels
- standards for sustainability and responsible sourcing



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Marie-Theres Kügerl
Montanuniversität
Leoben

Franz Josef-Straße 18
8700 Leoben

marie-theres.kuegerl@
unileoben.ac.at
+43 3842/402-2009
+43 664/80898-7614

Coordinated by:
Vienna University of Economics and Business,
Institute for Managing Sustainability
Welthandelsplatz 1A
1020 Vienna
Phone: +43-1-31336-5452
Email: info@re-sourcing.eu

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The Mobility Sector & Responsible Sourcing

Challenges & Project Focus



Stefanie Degreif

OEKO



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Mobility sector

Stefanie Degreif, Oeko-Institut e.V.

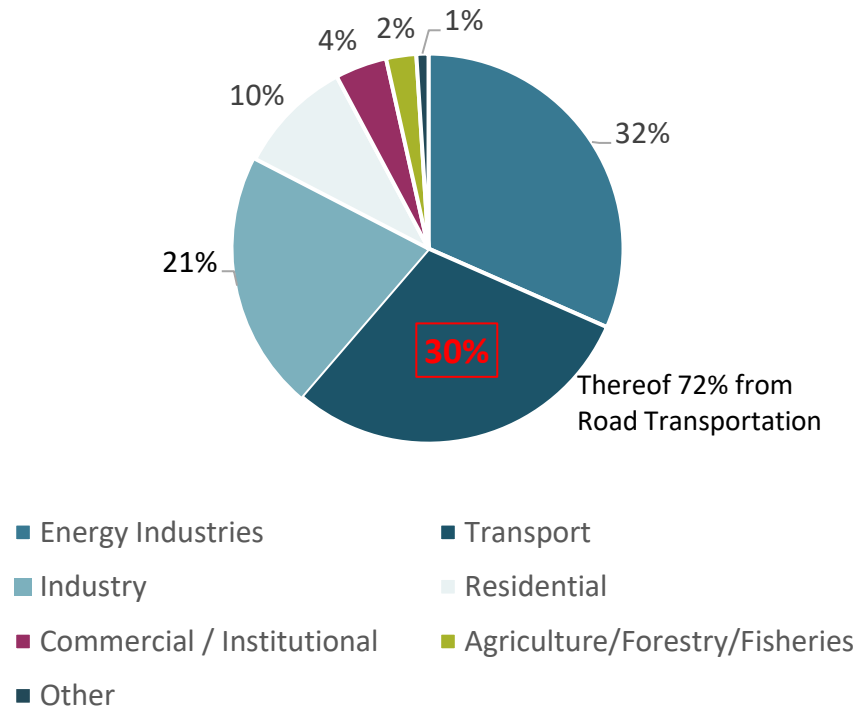
Virtual Event 9th October 2020



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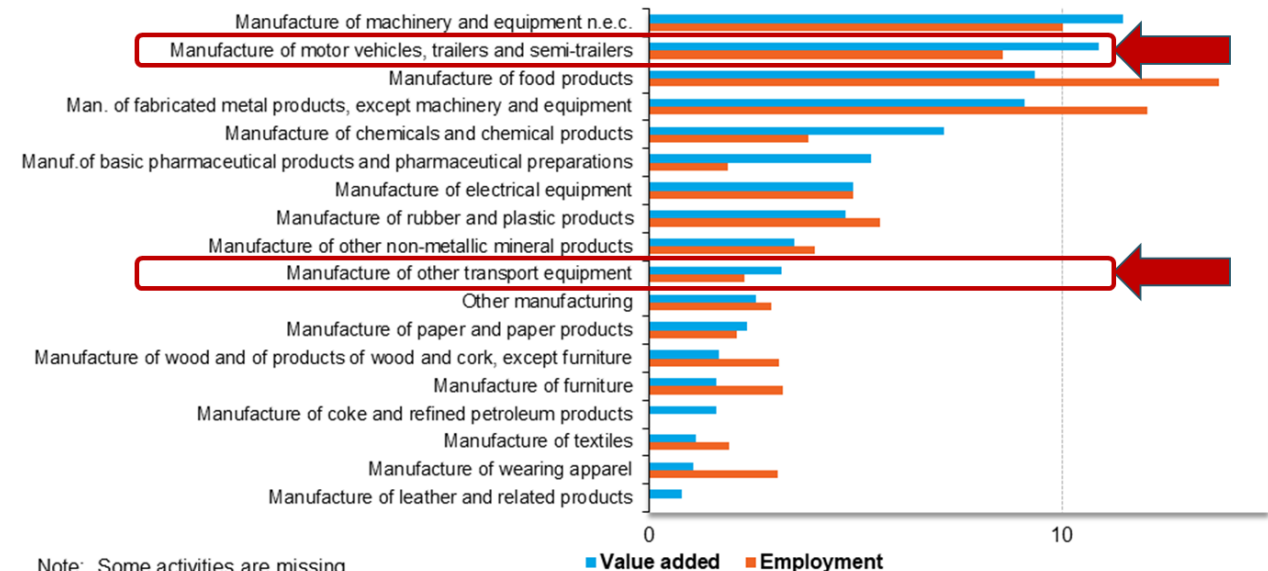
Relevance of the mobility sector

GHG emissions 2018 by sector: EU27



Source: European Commission (2020): Statistical pocketbook 2019; Part 3: Energy and environment (https://ec.europa.eu/transport/facts-fundings/statistics/pocketbook-2019_en)

Sectoral analysis of manufacturing EU-27, 2017

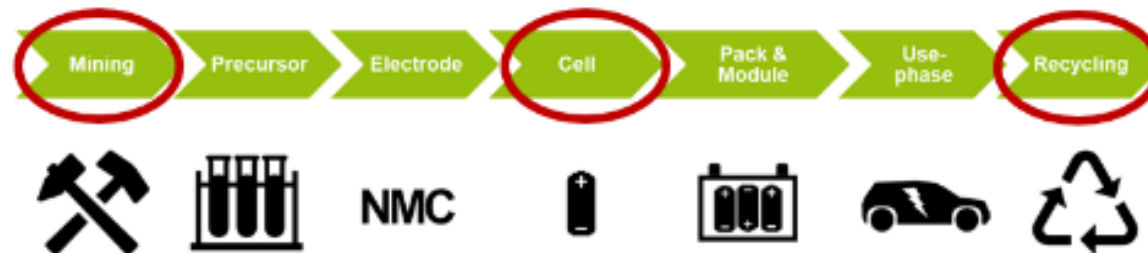


Source: Eurostat. Statistics Explained (2020): Manufacturing statistics – NACE Rev. 2. Sectoral analysis (https://ec.europa.eu/eurostat/statistics-explained/index.php/Manufacturing_statistics_-_NACE_Rev._2#Sectoral_analysis)



Focus within the mobility sector

- Focus on Li-ion batteries: In the value chain of an electric car the battery is the most valuable component with a share of 40%.
- Focus on three value chain steps: Mining, Cell production, Recycling



- Focus on battery materials: Lithium, Cobalt, Graphite, Nickel



Challenges we are considering

- A rapid increase in demand for the materials used in Li-ion batteries will require new mining projects and expanding production at existing facilities. → How to ensure that environmental and social requirements are met?
- Europe is highly dependent on Asian cell manufacturers. → How can sustainable cell production be established in Europe?
- A significant amount of spent batteries will need to be collected and recycled in the future. Additionally, the recovery of raw materials used in li-ion batteries via recycling is currently not addressing all relevant raw materials. → What actions and policies need to be undertaken to ensure adequate collection and recycling of spent Li-ion batteries and increase material specific recovery rates?



Next steps in the mobility sector

- State of play and roadmap concept: Spring 2021
- Workshop on state of play and roadmap concept: Spring/summer 2021
- Three publications for the mobility sector, beginning in early 2021:
 - State of play and roadmap concepts
 - Guidelines for good practice learning and impact in the mobility sector
 - Mobility sector roadmap for responsible sourcing of raw materials



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Stefanie Degreif
Oeko-Institut e.V.
s.degreif@oeko.de

Peter Dolega
Oeko-Institut e.V.
p.dolega@oeko.de

Coordinated by:
Vienna University of Economics and Business,
Institute for Managing Sustainability
Welthandelsplatz 1A
1020 Vienna
Phone: +43-1-31336-5452
Email: info@re-sourcing.eu

www.re-sourcing.eu



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The Electric & Electronic Equipment Sector & Responsible Sourcing

Challenges & Project Focus



Alejandro González

SOMO



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Project focus

Electronic and Electric Equipment Sector (EEE)

Alejandro González

SOMO

Centre for Research on Multinational Corporations



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 869276



Characteristics of the EEE industry

- (Electronics) is one of the **largest industries in the world**: approximately 18 million workers who produce 20% of global imports and generate US \$1.7 trillion trade in electronics products.
- European **consumer electronics segment revenue** expected to reach US\$ 78mn (€ 71mn) in 2020.
- European **sales of semiconductors** expected to reach US\$ 3.25bn (€ 2.97 bn) this year.
- EEE sector is key for many (digital) technologies and sectors (i.e automotive, healthcare, aeronautics, space, renewables, communications).



Issues for responsible sourcing

Sub-standard working conditions and human rights violations are pervasive along the entire value chain.

- low wages
- exposure to toxic chemicals
- negative environmental impacts
- health & safety risks
- child labour & forced labour,
- indigenous people's rights violations
- lack of implementation of ASM
- corruption
-



Focus

- **Value Chain segments**

- **Minerals:** 3TG and Mica

- **Ways forward discussion:**

- Resource use reduction
 - mandatory human rights due diligence
 - Just Transition for workers
 -
- transparency
- cross sectoral approaches
- respecting communities' rights





Next steps

- ***Road maps:*** proposed consultations starting in Summer of 2021
- ***Workshops:*** expected to be held in the Summer of 2022
- ***Sector state of play reports/guidelines:*** The project foresees three publications for the EEE sector starting in Spring 2023
 - “State-of-Play and roadmap concepts”
 - “Guidelines for good practice learning and impact in the EEE sector”
 - “EEE sector roadmap for responsible sourcing of raw materials”



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Alejandro González



alejandro@somo.nl

www.somo.nl

www.goodelectronics.org

Coordinated by:
Vienna University of Economics and Business,
Institute for Managing Sustainability
Welthandelsplatz 1A
1020 Vienna
Phone: +43-1-31336-5452
Email: info@re-sourcing.eu

www.re-sourcing.eu



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Summary of Key Points



by **Jan Rosenkranz**

Luleå University of Technology (LTU)

Session 1: Transitioning to Responsible Resourcing

- Advances in Responsible Resourcing
 - Responsible Resourcing practices as integral part of the wider sustainability agenda
 - Economic, social and environmental consequences of raw material extraction and consumption
 - Approaches to RS are numerous and varied
 - Safe and fair labor practices, human rights, financial integrity, environmental social impacts etc.
- Remaining gaps and challenges
 - Approaches largely focused on behavior of firms
 - Missing generally accepted standards and rules
 - Operation/strategy employment remains fragmented
 - What is needed
 - International collaboration and agreed definitions
 - Implementation of assurance and regulatory processes
 - Harmonized Responsible Sourcing processes
- The RE-SOURCING project
 - Objectives
 - Create supportive EU Framework Conditions
 - Foster the Global Application of RS to create a Level Playing Field
 - Advance RS Practices & Concepts
 - Build a Global Platform for the RS Community
 - Provision of an international digital and physical platform for stakeholders (global level)
 - Workshops and conferences
 - Digital tools as conference spaces, webinars, databases
 - Sector approach: Renewables, mobility, EEE
 - State of play and sector roadmaps for RS (sector level)
 - Workshops and expert consultations
 - Flagship case mapping (firm level)
 - Guidelines for good practice

2

Session 2: Disruptions to Responsible Sourcing – From Covid-19 to the Green Deal



Disruptions to Responsible Sourcing

Challenges & opportunities emerging in 2020



Alexander Graf

Vienna University of Economics & Business (WU)



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Disruptions to Responsible Sourcing in 2020

Challenges & Opportunities

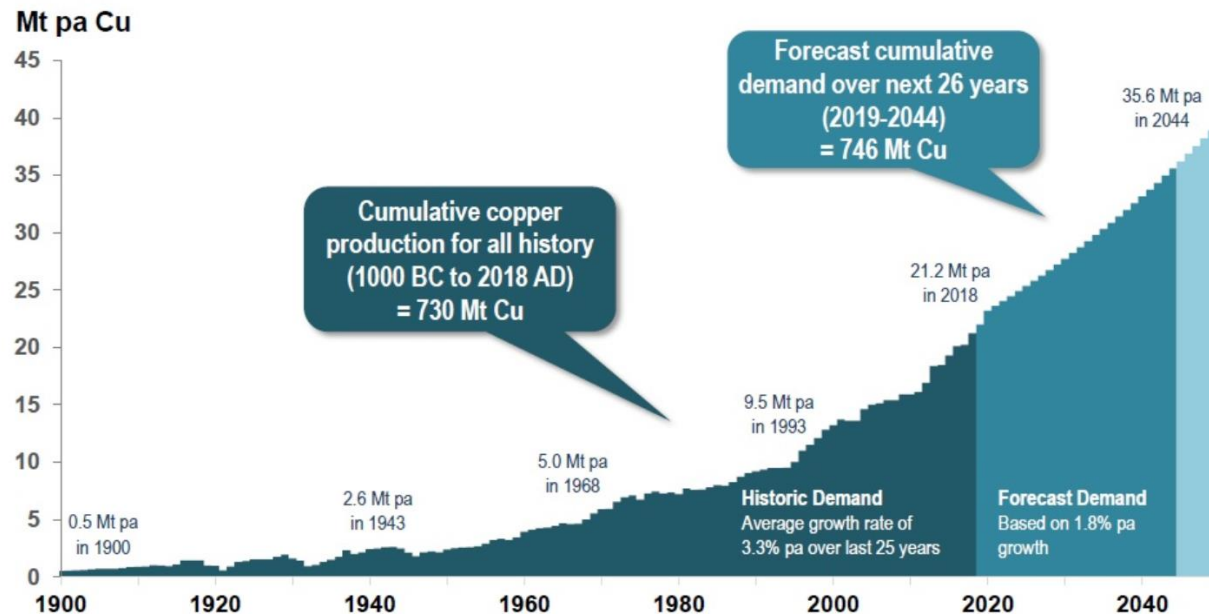
Alexander Graf – Vienna University of Economics and Business,
Institute for Managing Sustainability



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Pre 2020 (1) – Demand projections



Sources: Historical data from USGS and Office of the Chief Economist (Sept 2018)

Metal	Demand 2035 / Production 2013	Related innovation technology
Lithium	385%	Lithium-ion batteries, lightweight airframes
Heavy REE	313%	Magnets, e-cars, wind power
Cobalt	94%	Lithium-ion batters, Synthetic liquid fuels
Tin	42%	Lead-free solders, wind mills
Palladium	47%	Catalysts, seawater desalination
Copper	29%	Electric motors RFID

Source: Marscheider-Weidemann et al. (2016)



Pre-2020 (2) – Commitment gap to sustainable production

- **80% of senior mining executives:**
Sustainability-oriented strategies are essential for current and future competitive advantage
- **63% of chief executives:**
Sustainability to transform their industry within five years.

Source: [WEF \(2015\)](#)

Actual ESG disclosure of top 40 mining companies:



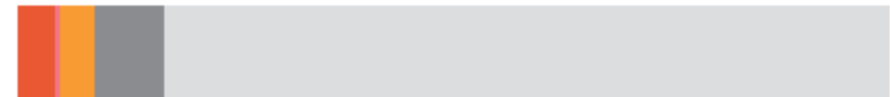
11 companies

Demonstrate all three key factors



25 companies

Demonstrate at least one key factor



4 companies

Currently not completely addressing any key factors

■ Diversified ■ Base metal ■ Precious metal ■ Other

Source: [Mine 2020: Resilient and Resourceful \(PwC\)](#)



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~2020



COVID-19 Pandemic

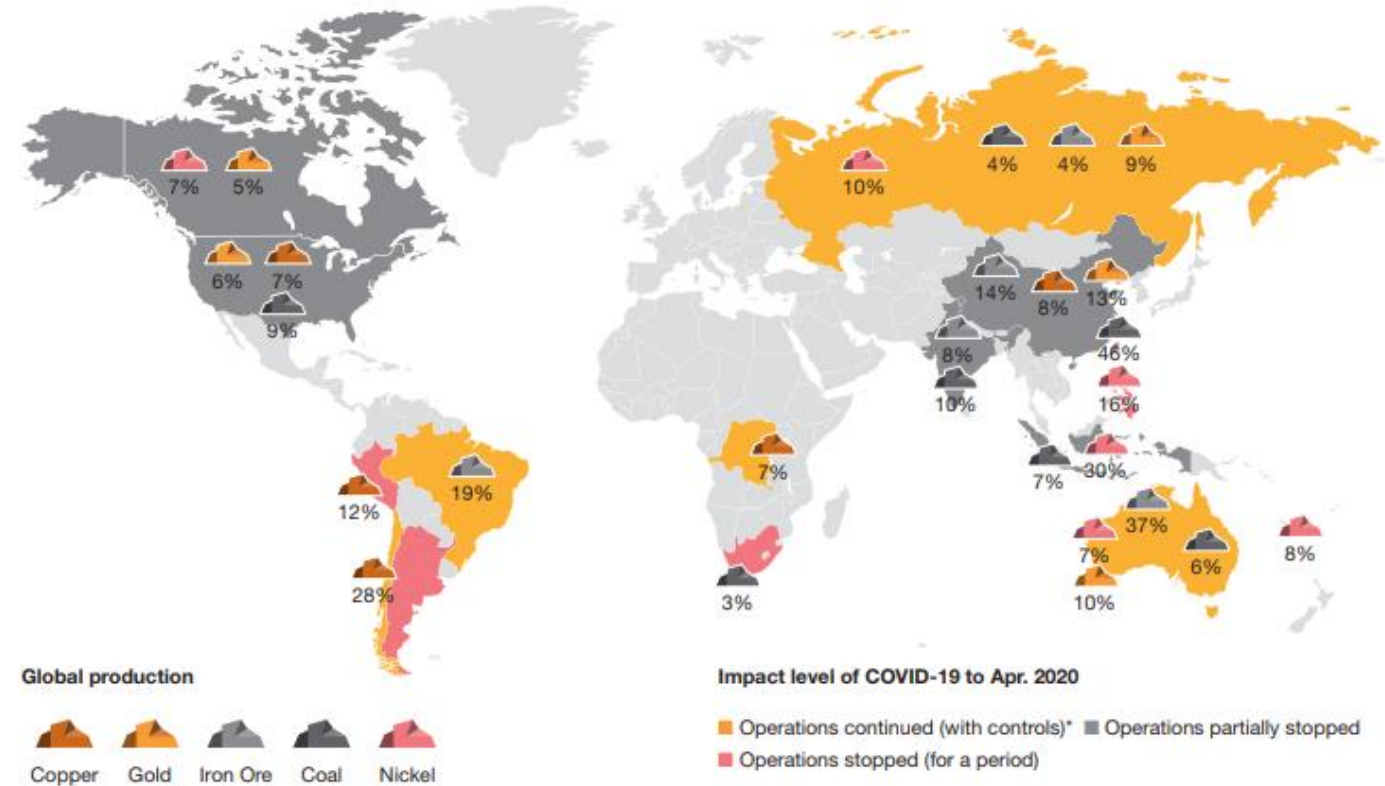
Impact on mining operations



EU Green Deal

- There are **no net emissions** of greenhouse gases by 2050
- Economic growth is decoupled from resource use
- No person and no place is left behind

Source: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en



*"Operations continued" signifies 'no material or significant production interruptions'

Note: Percentages reflect geographical split of production, by commodity.

Source: USGS Mineral Commodity Summaries, 2020; BP Statistical Review of World Energy, 1965–2018; PwC analysis

Source: Mine 2020: Resilient and Resourceful (PwC)



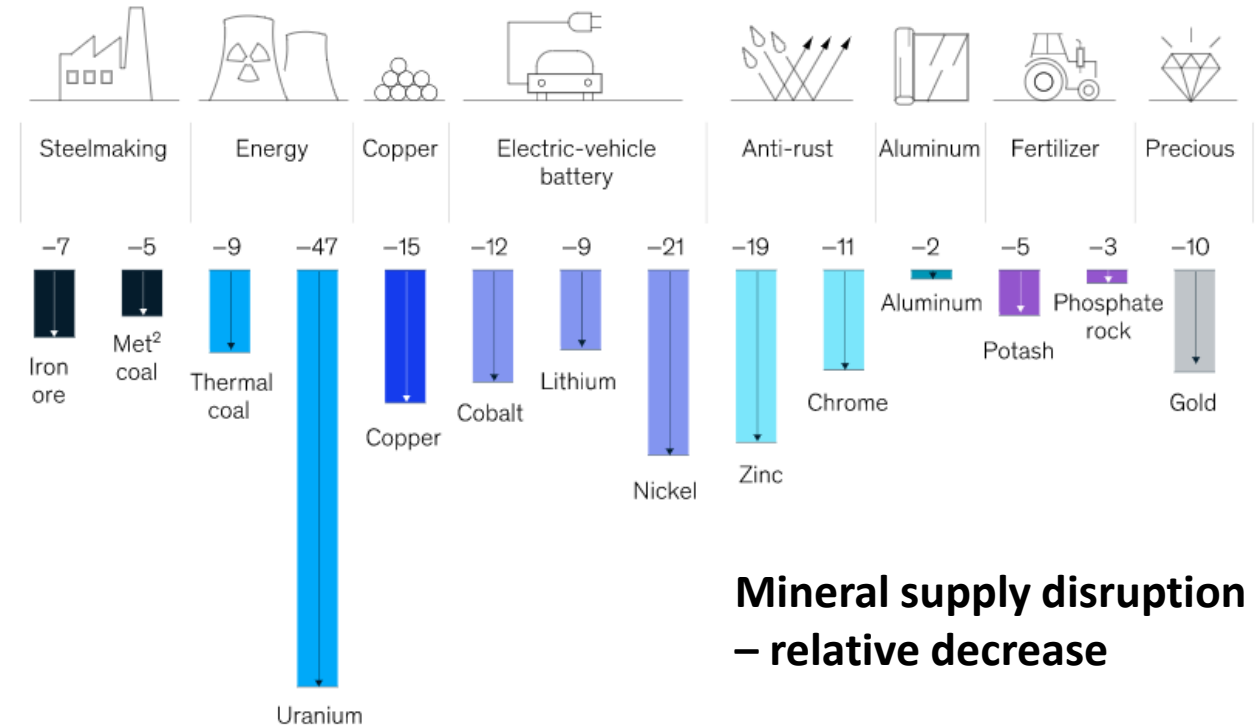
Stimulus packages & supply chain disruptions

Post-COVID recovery stimulus packages focus on **‘green investments’** and **‘green recovery’** (China: USD 430 billion, EU: EUR 750 billion)

→ Does increased investment into green technology automatically lead to increased production?

→ Do we first need to better understand current supply chain disruptions and how they impact production for a green economy?

Estimated supply-disruption impact compared with 100% production capacity, % (monthly impact)¹



**Mineral supply disruption
– relative decrease**

¹Monthly impact estimated based on May 2020 figures; only includes disruptions following COVID-19 outbreak and existing disruptions (eg, large iron-ore-capacity disruption in Brazil).

²Metallurgical.

Source: MineSpans by McKinsey; McKinsey analysis

The green revolution's inconvenient truth about mining

Drive to cut emissions rarely acknowledges graft and exploitation on the ground



A woman and child break rocks from a copper and cobalt mine in Lubumbashi © AFP/Getty Images

Francis R Fannon MARCH 17 2020



If we are to deliver on the promise of renewable energy, we need to lift the veil off corrupt governments, dirty environmental practices and atrocious labour violations. The green revolution must come to terms with this inconvenient truth and address it head on.

‘Sustainability’ credentials for the projected mineral supply remains unproven.

“The largest reserves of metals & minerals required for renewable technologies are found in weak states with poor governance”

– FT (March 2020)

Mining

+ Add to myFT

Aboriginal group calls Rio Tinto's destruction of sacred site 'corporate vandalism'

Traditional owners reject miner's claim it was unaware of the significance of rock shelters



The Juukan Gorge pictured in 2013, left, and in May this year after the explosions © HANDOUT/PKKP Aboriginal Corporation/AFP via Getty Images

Jamie Smyth in Sydney and Neil Hume in London SEPTEMBER 25 2020



The traditional owners of a 46,000-year-old sacred Aboriginal site destroyed by Rio Tinto have rejected the miner's claim it did not realise its archaeological significance before blowing it up.



Opportunities

- Accelerated move to ‘green’ and more sustainable economy aided by **stimulus funding**
- **Identification of new risks** in supply chains and designing of mitigation measures
- **Stress testing** of RS approaches; learning from the COVID 19 experiences
- **Technology & automation** in mines, increasing safety levels

Challenges

- There is a **new normal**, but what is it?
- Protecting the EU consumer – but **at what cost** to the developing country community/government?
- Will sustained supply at **any [ESG] cost** become an economically acceptable answer?
- The case for increased demand is clear, but has the **case for increased supply** been adequately analysed?



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Disruptions to supply chains – RS & COVID-19

How did countries and companies (LSM) approach the mining sector - as essential or non-essential work?



Andrew Van Zyl

SRK South Africa

Introduction to the SRK Team

Re-Sourcing Virtual Event

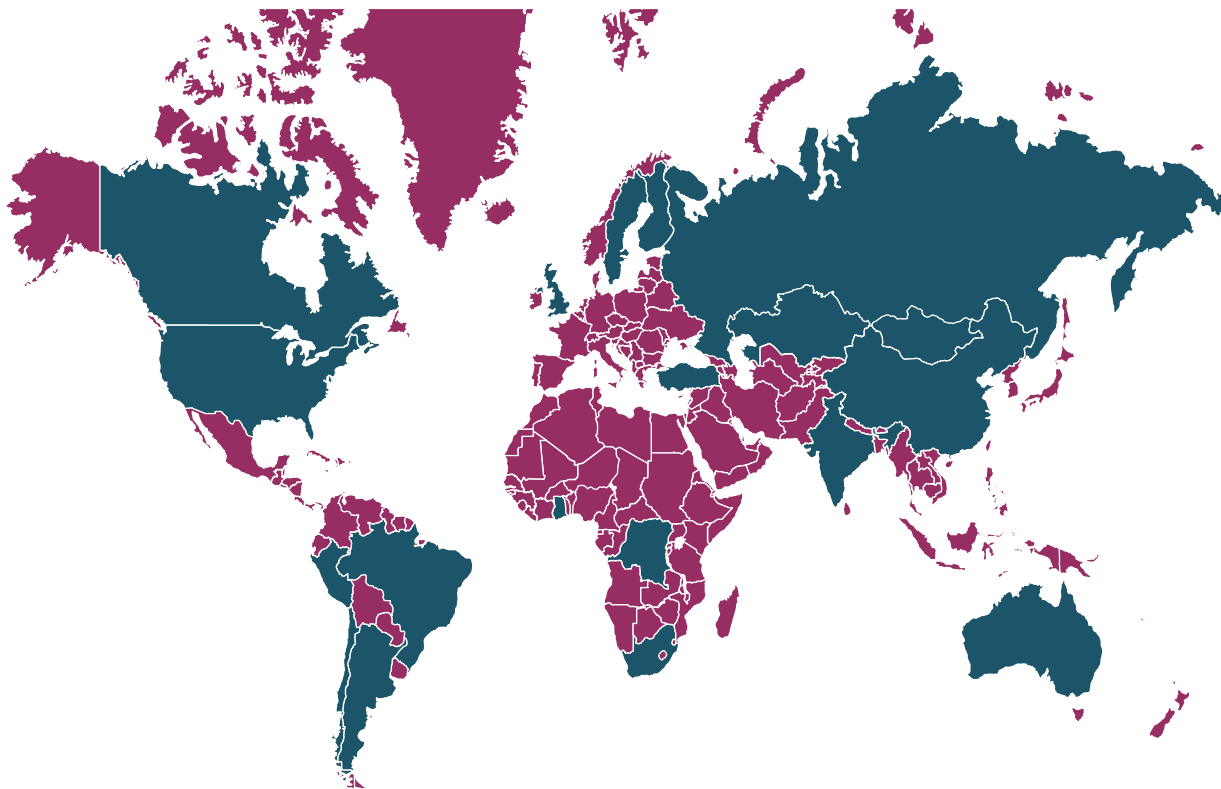
9 October 2020



Key facts about SRK:

- Established in 1974
- Employs over 1,400 Group staff, augmented with about 150 associates
- Provides specialist services from exploration to mine closure
- Primarily active in the mining industry
- Is owned by over 500 employee shareholders

Who we are



- Argentina
- Australia
- Brazil
- Canada
- Chile
- China
- Congo (DRC)
- Finland
- Ghana
- Hong Kong
- India
- Kazakhstan
- Mongolia
- Peru
- Russia
- South Africa
- Sweden
- Turkey
- United Kingdom
- USA

Our mission is to provide expert advice and solutions for clients requiring specialized services, mainly in the fields of mining, geotechnics, water, tailings, mine waste and environment.

Who we are

■ Our Philosophy

- Clients: SRK believes that, in order to succeed, we must contribute to the success of our clients.
- Staff: The firm's performance and abilities are only as good as the staff we are able to attract, develop and retain.
- Technology: A cornerstone of SRK's philosophy is to develop and embrace new technologies and methodologies to the advantage of our clients and our business.
- Co-operation: SRK encourages co-operation and communication between our international offices, and works with international partners to the best advantage of clients.
- Growth: It is SRK's view that growth of our business must be in response to the requirements of clients. Growth can only be pursued with carefully selected staff members.

■ Our Objectives

- Maintaining broadly based employee ownership
- Providing an environment for a satisfying and challenging career
- Providing an umbrella for ambitious individuals to grow their client base and their reputations in directions somewhat of their own choosing
- Maintaining an environment which is conducive to innovative thinking and solutions
- Recognizing and rewarding excellence and achievement
- Fostering a unified corporate culture
- Providing a superior investment for employee shareholders

Our mission is to provide expert advice and solutions for clients requiring specialized services, mainly in the fields of mining, geotechnics, water, tailings, mine waste and environment.

■ 01

Meet the Team

Introduction to the Re-Sourcing Team



Director and
Principal Consultant

Andrew van Zyl

- Andrew is a director and principal consultant at SRK. He has extensive experience in valuation of mineral assets and projects. He has consulted in both the private and public sector on valuation and also on mining conventions and concessions. Andrew is involved in numerous industry bodies including chairing the SAMVAL committee, on the council of the SAIMM and on the IMVAL committee. Andrew will manage the project and the inputs from the various team members.



Corporate
Consultant

Roger Dixon

- Roger Dixon is a Corporate Consultant at SRK Consulting South Africa with over 50 years' experience in the South African mining sector. His principal qualification is in mining engineering, and his career has comprised senior management roles at operations and head offices of large gold mining companies; as well as consulting, where he has worked extensively in mine valuation, due diligence studies and engineering studies. Roger played a leading role in developing reporting standards through the South African Mineral Resource Committee (SAMREC) and the global Committee for Mineral Reserves International Reporting Standards (CRIRSCO), two committees on which he still serves. Roger has represented CRIRSCO since 2007 on the Expert Group on Resource Management; a sub-committee of the United Nations Economic Commission for Europe. Roger's role will be to provide strategic input on sourcing mechanisms, and cooperation between mining companies, their shareholders, and the communities in which they operate.



Principal
Sustainability
Consultant

Lisl Pullinger

- Lisl Pullinger is a Principal Sustainability Consultant who works in association with SRK. She works primarily in strategic advisory capacity for social and environmental development projects in Africa. Lisl's clients include large scale mining companies in South Africa and the Democratic of Congo as well as civil society in the SADC region. Lisl has a long-standing partnership with Mining Shared Value developers of the Mining Local Procurement Reporting Mechanism and produced the first multinational mining company public report using this instrument in 2017. She has a keen interest in gender issues in local content and is an expert participatory workshop facilitator. Lisl will provide strategic input regarding integrating local content into responsible sourcing in the mining sector.



Senior
Environmental
Engineer

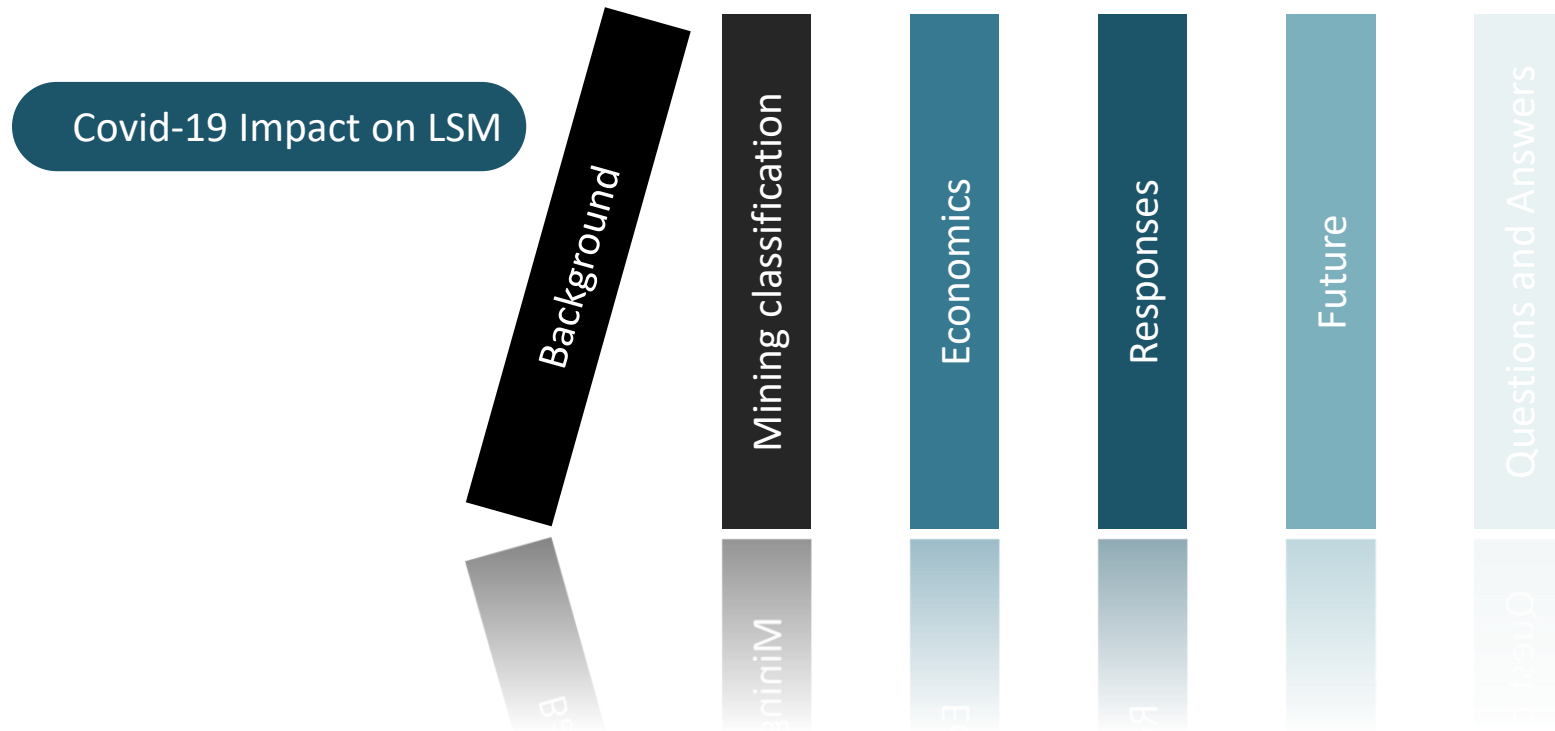
Bjanka Korb

- Bjanka Korb is a senior environmental engineer at SRK Consulting, who works primarily in mine water management and water use optimisation. Bjanka's experience also includes due diligence reporting and feasibility studies, and she is registered as a professional engineer with the Engineering Council of South Africa. A chemical engineer by training, Bjanka is passionate about sustainable development and furthered her studies by completing a master's degree in Development Practice. Bjanka will be reviewing technical aspects of the practical implementation of responsible sourcing in the mining sector.

■ 02

LSM Sector and Covid-19

LSM Sector and Covid-19



Background

- Mining industry has experience with:
 - Infectious diseases and respiratory illness
 - Community engagement
 - Confidentiality
 - Drug trials
 - Public health
 - Epidemiology
 - Safety
 - Water management

Mining classification

- Mix of essential and non-essential
- Coal for power stations essential
- Some refineries continued
- Sector plans drawn up for other
- Differentiation between underground and open cast
- Staged return to full employment and production

Economics

- Prices very volatile
- Supply chains disrupted
- Distribution affected (movement to ports)
- Forecasts for price unreliable in short and sometimes medium term
- Costs also affected in some cases
- Short-term shifts in supply and demand
- Exchange rates volatile

Responses

- Focus on production
- Mitigation with stockpiles
- Investments in:
 - Testing capacity
 - Food and water
- Coordination by Minerals Council
- Mining sector plan helped form basis for other sectors
- Some voluntary lockdowns for localised outbreaks

Future

- More remote working likely
 - First senior and office
 - Transition in other roles to remote work
- Some mines near closure will struggle to reopen
- Economic impact on suppliers and employees
- Prevalence of misinformation and difficulties in communicating with stakeholders
- Setbacks to Social and Labour Plans

Questions and answers





Disruptions to supply chains – RS & The Green Deal:

Responsible Sourcing: Is the mining industry ready?



Sophie Chung
Skarn Associates



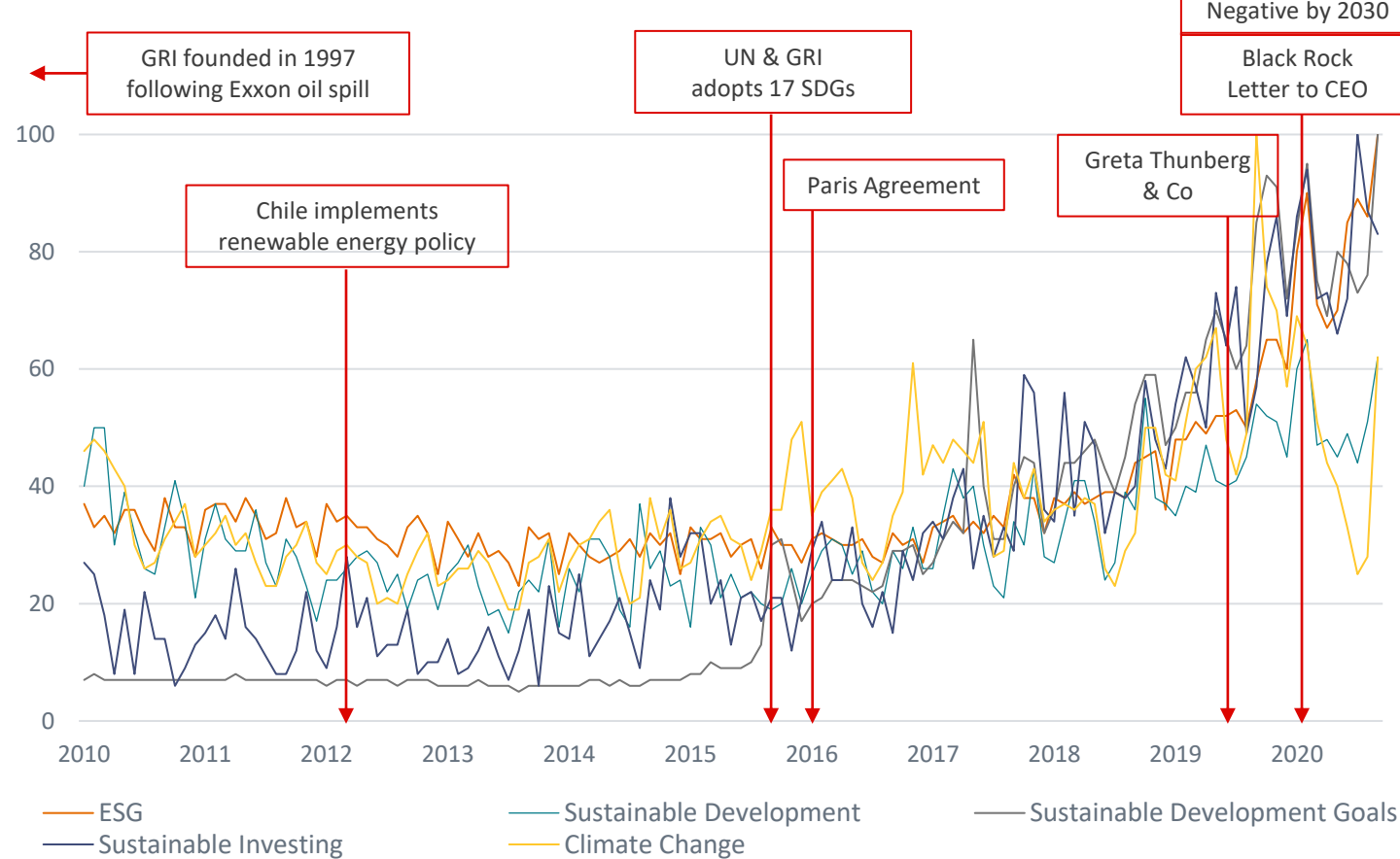
RESPONSIBLE SOURCING: IS THE MINING INDUSTRY READY?
OCTOBER 2020

SKARN
ASSOCIATES

WHERE IS THE DEMAND FOR ESG COMING FROM?

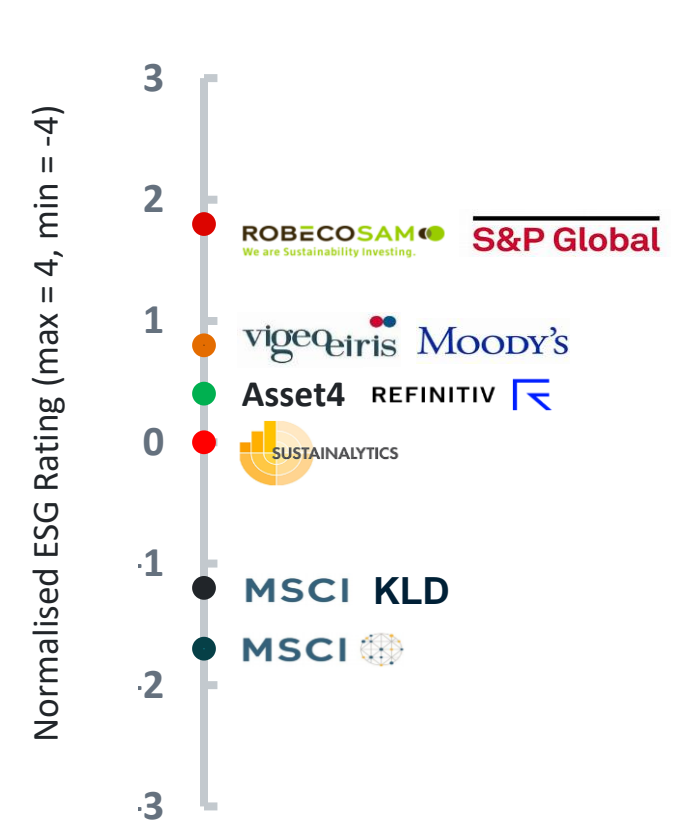
*Multiple drivers including global & state policies, consumer culture, NGOs, corporate initiatives & investment standards;
But the mining industry has been disclosing ESG metrics and setting goals for decades*

Google Search trends, 100 = highest search frequency since 2004



Source: [Google Trends](#)

Barrick Gold: ESG Rating by Agency



Source: Berg, F., Kölbel, J.F., & Rigobón, R. (2020).
Aggregate Confusion: The Divergence of ESG Ratings.

ESG METRICS: CAN WE MEASURE IT?

Currently covered
Coming soon

Skarn's mission is to provide measurable and comparable metrics for the SDGs for past, present and future years

Environment

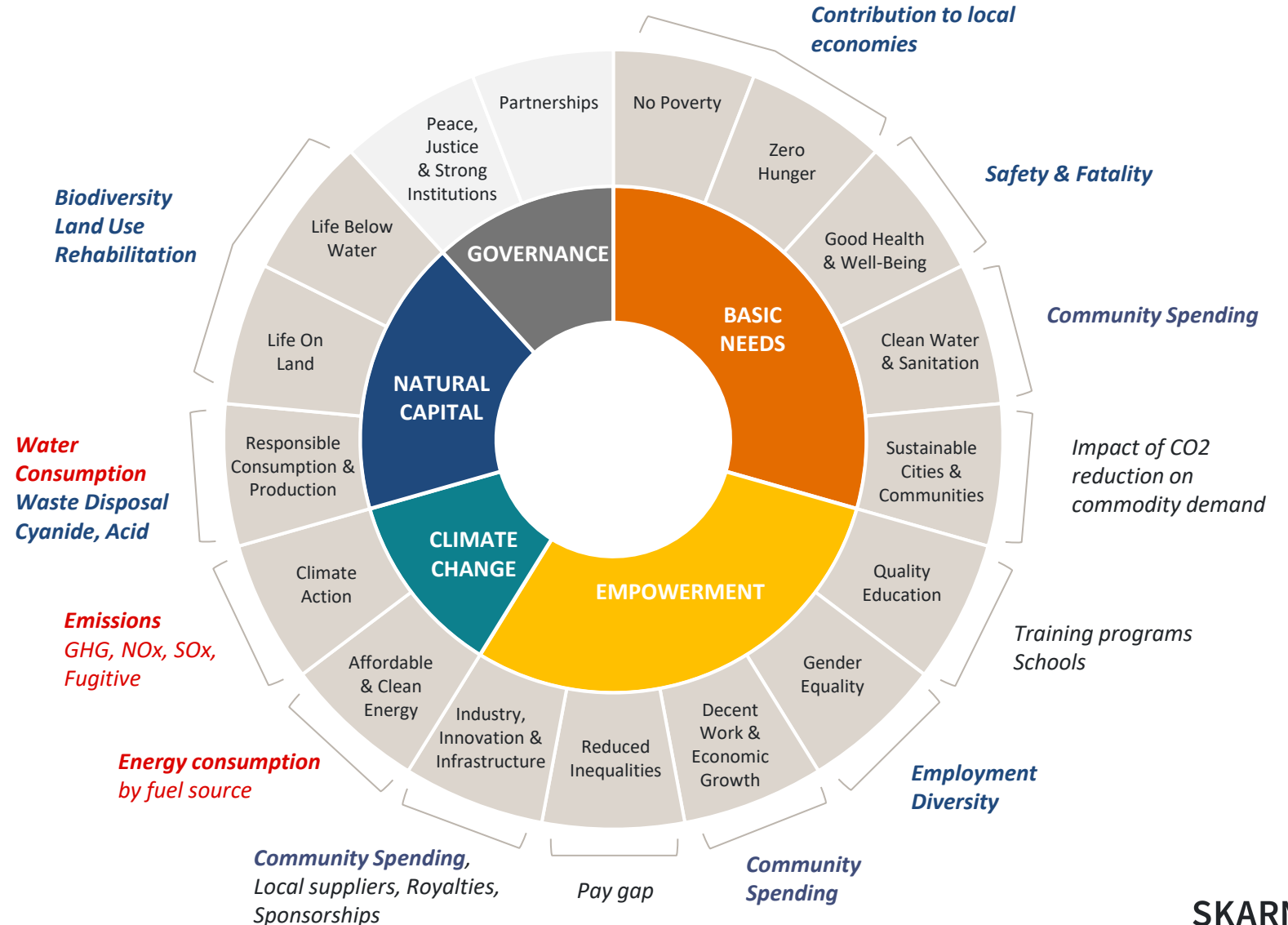
- Emissions (GHG, NOx, Sox & Fugitive)
- Water Consumption / % Recycled
- Waste Disposal
- Land Disturbance
- Cyanide / Acid Consumption

Social

- Safety & Fatality
- Community Spending
- Training
- Diversity & Pay Equality

Governance

- Taxation
- Mineral Security
- Board Representation
- Proxy Governance



WHERE IS THE MINING INDUSTRY TODAY?

Plenty of data available, but first it must be normalised at the asset level...

Like-for-like comparison

- This requires normalised to include emissions from start to finish of the supply chain

Each commodity is different

- Key drivers for GHG emissions are different for copper vs. nickel vs. bulks

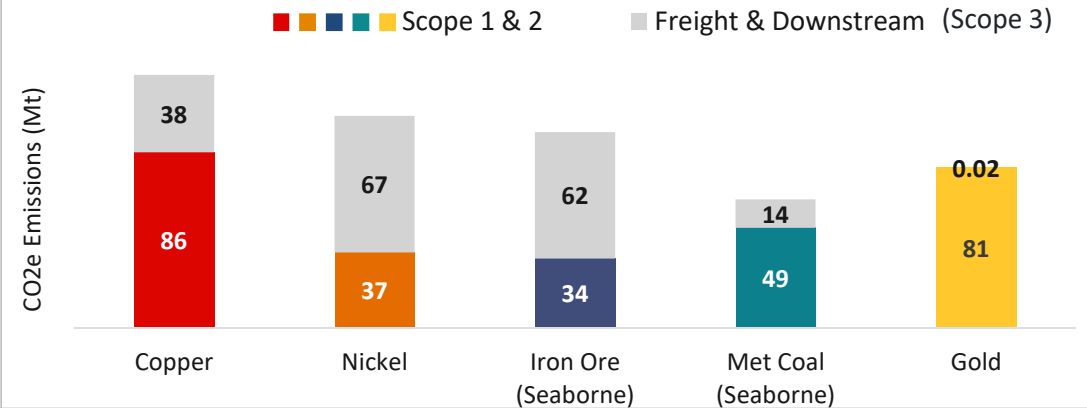
“E” most measurable, “S” & “G” harder to interpret

- All three should be taken into account to assess a n asset / company

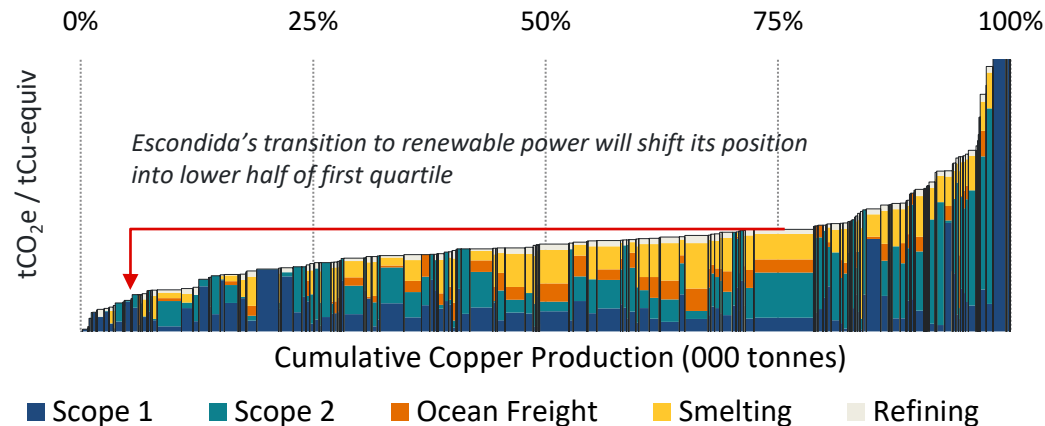
Asset vs Company

- ESG performance is asset specific; bad performance can be hidden behind a corporate average

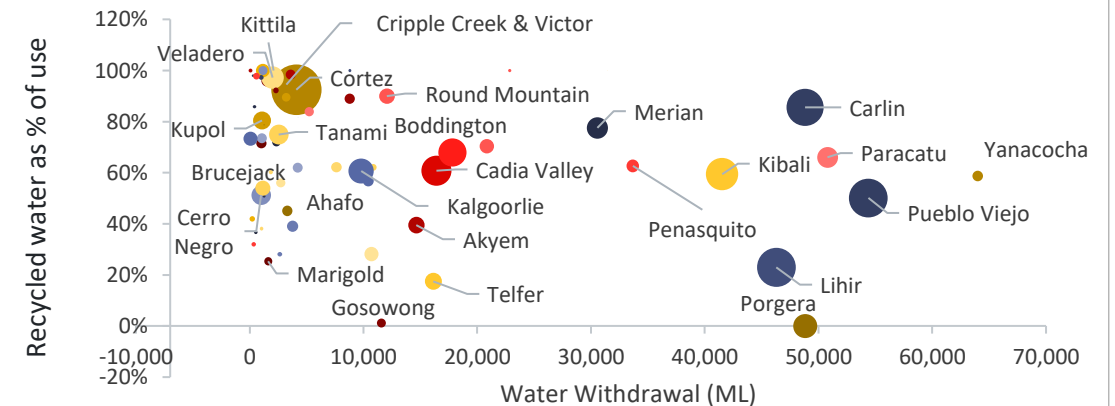
CO2e Emissions by commodity, to first saleable product



GHG Emission intensity - Copper



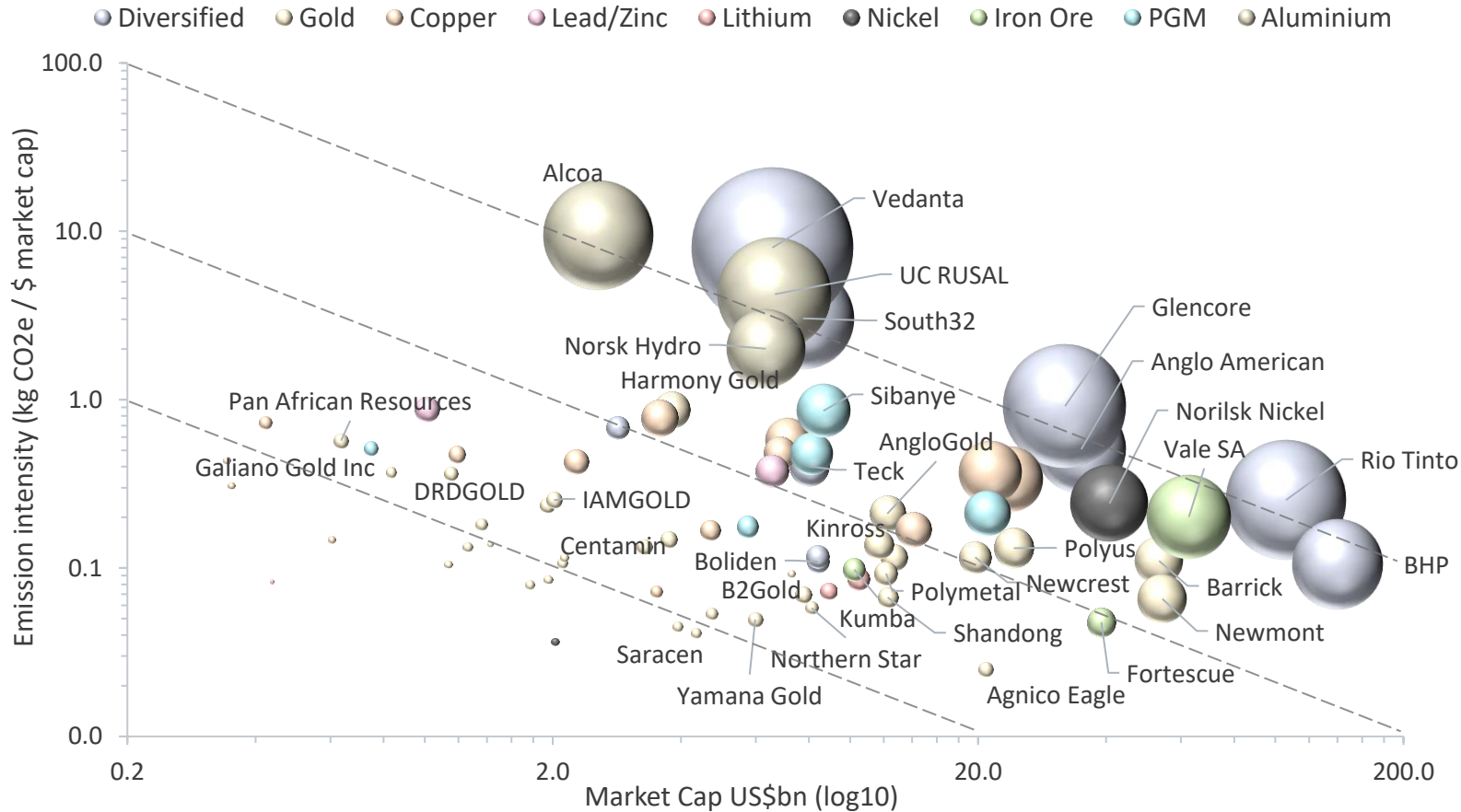
Water recycled vs. water withdrawn - Gold



SUSTAINABLE GOALS: HOW CAN COMPANIES ACHIEVE THIS?

Ability to implement change is dependent on mine economics and company financials

Will require long-term investment that is not driven by IRR, and supporting technology that is commercially available



Size = Scope 1+2 CO₂e emissions. Market Cap as of 16 Sept 2020. Vedanta (for reference) is now delisted.

Source: Skarn Associates

Tier 1

- Long mine life (> 20 years)
- High profitability
- Able to self – fund innovative, large scale projects*

Tier 2

- Medium mine life (> 10 years)
- Medium profitability
- Able to fund smaller, modular projects which are commercially available*
- Benefits from third party collaboration*

Tier 3

- Short mine life (< 10 years)
- Low profitability
- Difficult to justify new investment*
- Requires third party collaboration and incentives to 'close' responsibly*

KEY TAKEAWAYS

Contribution must come from everyone, but policy makers will hold the key

▲ Mining Industry

Ability to implement change is dependent on mine economics and ownership

SDGs must be monitored from mine to saleable product including freight and downstream processing

New technology takes c. 25 years to penetrate the market; can policies accelerate?

▲ Power Providers

Key to decarbonization of mines

High investment is required to switch grid systems

▲ Investors & Financiers

Support innovative technologies and projects

Willing to support IRR-neutral / -negative projects

▲ End Users

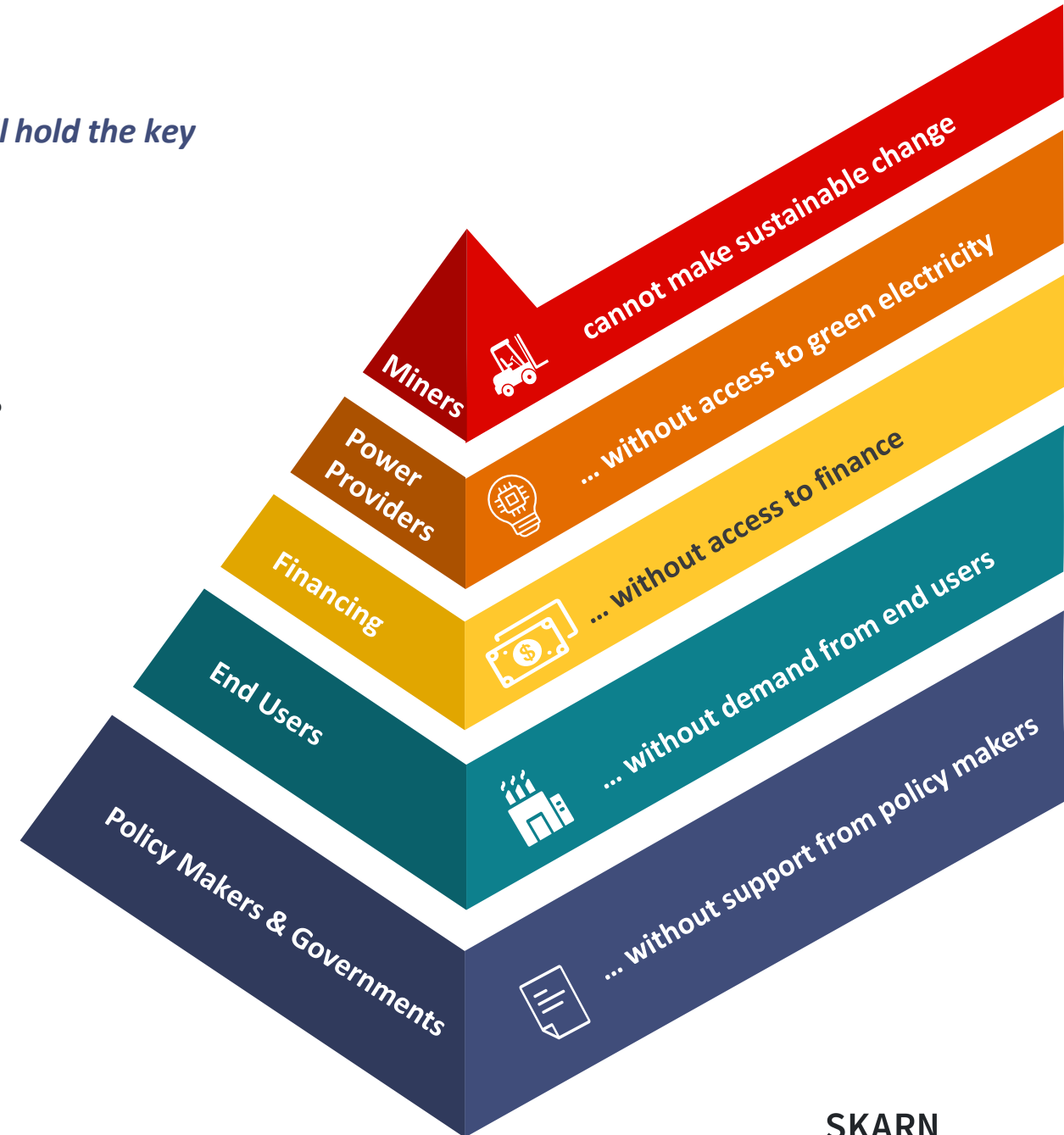
Discipline is required for efficient consumption where supply is limited

Facilitate preferential use of commodities in green products and sectors

▲ Policy Makers & Governments

Set policies conducive to CHANGE – not based on where a mine is today but where they aspire to be in the future

Sole focus on current positioning of mines will disrupt supply and bifurcate the financial market



CONTACT US



Sophie H. Chung

Director, Industry Analysis



sophie.chung@skarnassociates.com



www.skarnassociates.com



[@SkarnAssoc](https://twitter.com/SkarnAssoc)



[LinkedIn](#)

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Disruptions to Responsible Sourcing

Wrapping up the session



Shahrzad Manoochehri

World Resources Forum



re-sourcing

RE-SOURCING Virtual Event

Wrap up

Shahrzad Manoochehri – World Resources Forum (WRF)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 869276



- What can we learn from the **current performance of the responsible sourcing approaches** and the **COVID-19 experiences**, to develop safeguards to be applied in future? What are the **gaps and challenge**?
- What needs to happen within the entire supply chain to support the EU ambition of having a **responsibly sourced mining value chain**?
- What should we, as **the RE-SOURCING project team**, take away from these lessons and experiences?



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THANK YOU
for your attention!



Next activities:

- **Renewable Energy: Virtual Roadmap Workshop on the 29 October 2020 – registration open, please join us!**
- **Register to the RE-SOURCING network!**
- **Save-the-Date for our Opening Conference: 18 – 19 January 2021**



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THANK YOU
for your attention!



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Coordinated by:
Vienna University of Economics and Business,
Institute for Managing Sustainability
Welthandelsplatz 1A
1020 Vienna
Phone: +43-1-31336-5452
Email: info@re-sourcing.eu

www.re-sourcing.eu



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