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RE-SOURCING Virtual Conference November 2022
Reality Check on Responsible Sourcing
Trends, obstacles and opportunities

Collection of presentation slides
from expert input presentations at the conference
Day 2



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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RE-SOURCING Virtual Conference November 2022
Reality Check on Responsible Sourcing
Trends, obstacles and opportunities

Day 2 | Session 3 - Digital Solutions for Supply Chain Due Diligence

A reality check for companies,
what to expect from Blockchain & Co.





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Input presentation

The role of emerging technology to support sustainable development in Supply Chains

Rashad Abelson

OECD



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Is there a role for
blockchain in responsible
supply chains?



The role of emerging
technology to support
sustainable development in
Supply Chains

Rashad Abelson
Legal Expert
OECD Centre for Responsible Business Conduct



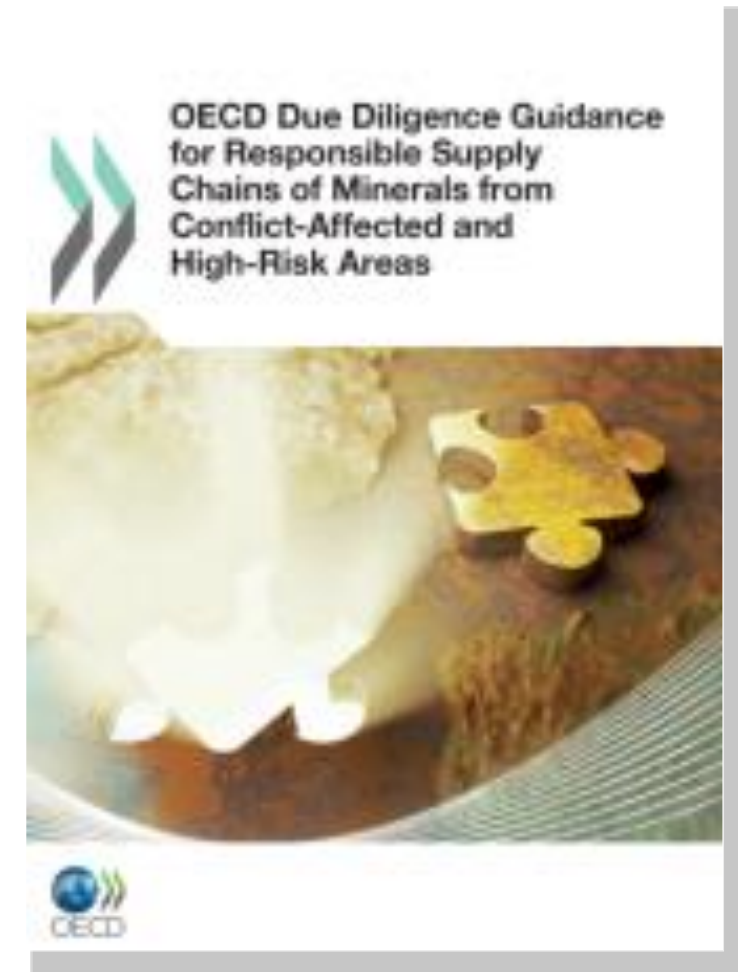
OECD Due Diligence Guidance for Responsible Mineral Supply Chains

Objective – To promote responsible investment!

- ✓ **Clear, practical recommendations for companies** to ensure responsible operations and sources of supply:
 - **No** support to non-state armed groups, **No** “serious abuses”
 - **Prevent & mitigate** support to **public security forces**, **bribery**, **tax evasion**, **money-laundering** and **fraud** in supply chains
 - **Strengthen** internal controls, due diligence systems, engagement with suppliers (e.g. supplier upgrading)

Principles

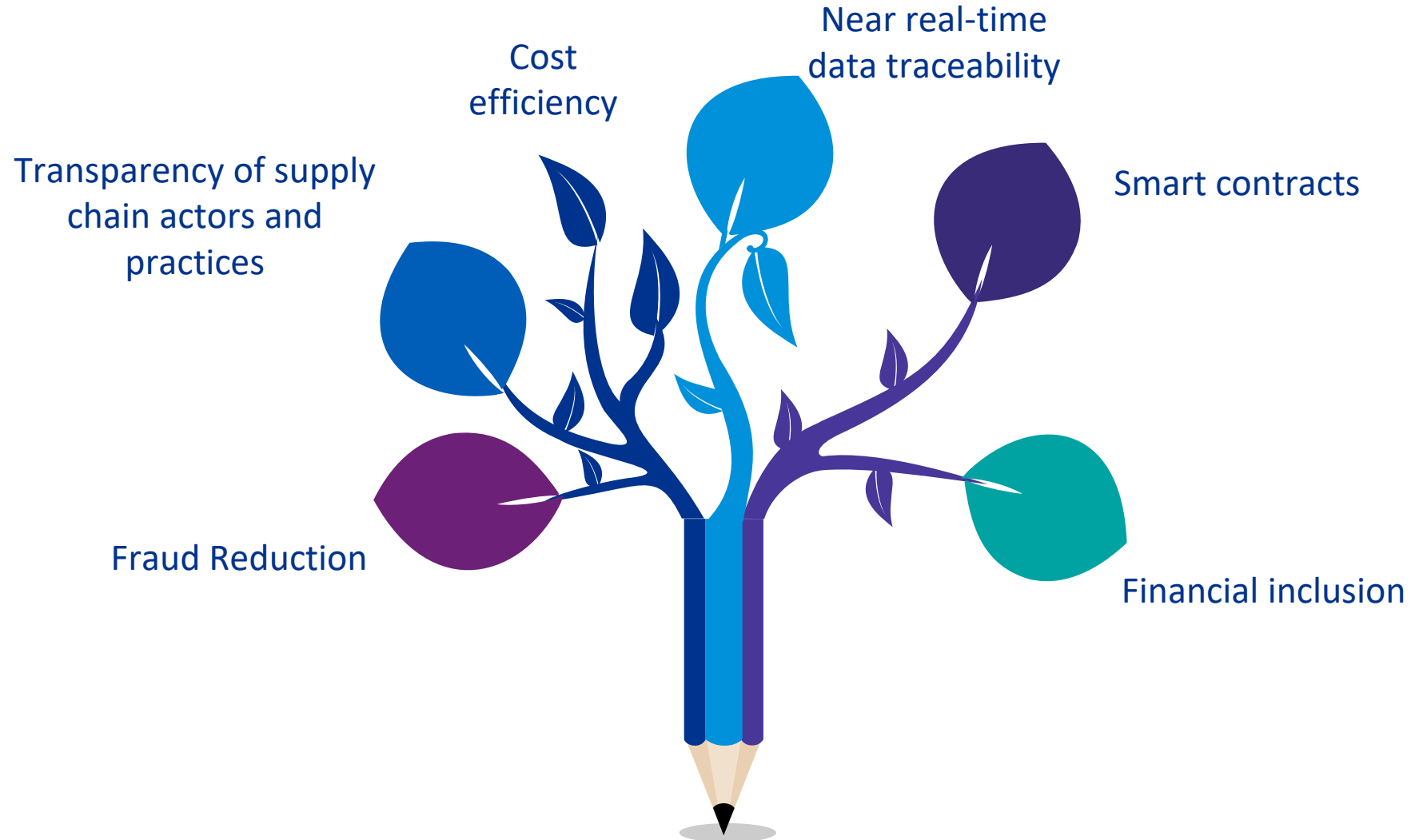
- ✓ **Progressive improvements** over time and **good faith and reasonable efforts** promoting constructive engagement with suppliers
- ✓ **Global scope** - intended to enable investment and trade in **conflict-affected and high-risk areas**, i.e. no blacklists, no embargoes, no protectionism



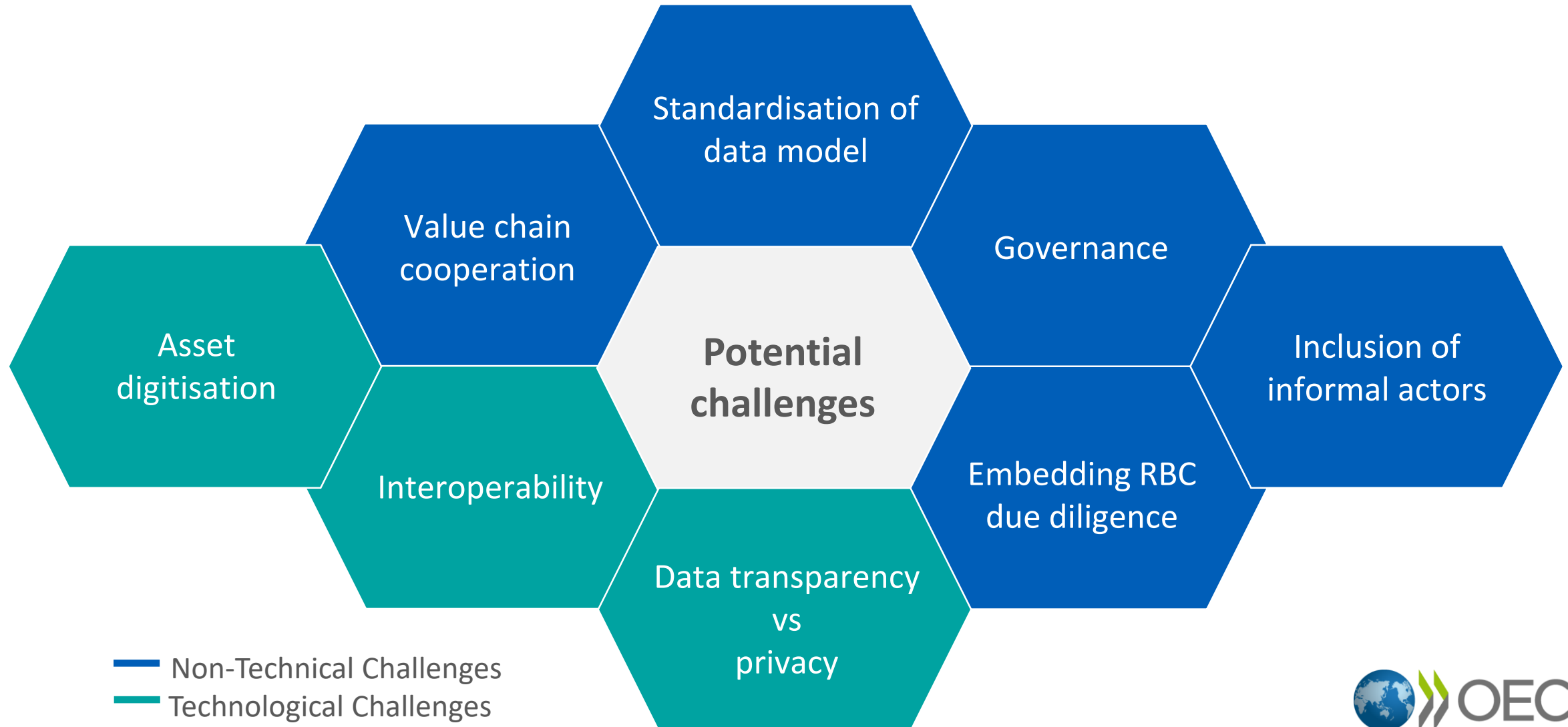
Due diligence challenges



Desired outcomes of tech solutions



Challenges in blockchain adoption



Main findings

- 01 Blockchain has the potential to provide a near-real time development of supply chain information, allowing better control in localising risk hot spots and performing risk mitigation
- 02 Access to genuine information uploaded throughout the supply chain means access to verifiable inputs and outputs
- 03 Blockchain can deliver more transparency and increased accuracy of supply chain due diligence information enabling a dynamic and effective due diligence process
- 04 Development of blockchain initiatives could benefit from multi-stakeholder cooperation in order to develop consistent and coherent rules and answer key governance questions



Broader considerations and recommendations

Policy makers

- Facilitate governance model development
- Develop clear guidance
- Promote development of standard data models
- Align policy development and guidance
- Work with other governments and international organisations

Implementing organisations

- Technology should not supplant or replace other due diligence efforts
- Do not duplicate efforts
- Work together with stakeholders
- Develop a standard data model
- Create a governance model
- Aim for interoperability
- Technology should facilitate market access for responsible ASM, not act as an additional barrier



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Input presentation

Digital Solutions for Supply Chain Due Diligence -Some business perspectives

Audrey Daluz

KPMG



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Digital Solutions for Supply Chain Due Diligence – Some business perspectives

RE-SOURCING VIRTUAL CONFERENCE

—
9th November 2022



Businesses are under increasing pressure to build sustainable & transparent supply chains

Top three stakeholder groups creating pressure to invest in sustainable initiatives¹...

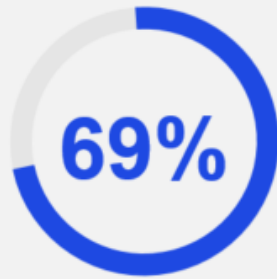
63% Customers*

48% Investors

46% Regulators



of the top companies by spend worldwide were reporting on sustainability²



of survey respondents indicated that supply chain transparency has recently been identified as a strategic topic³

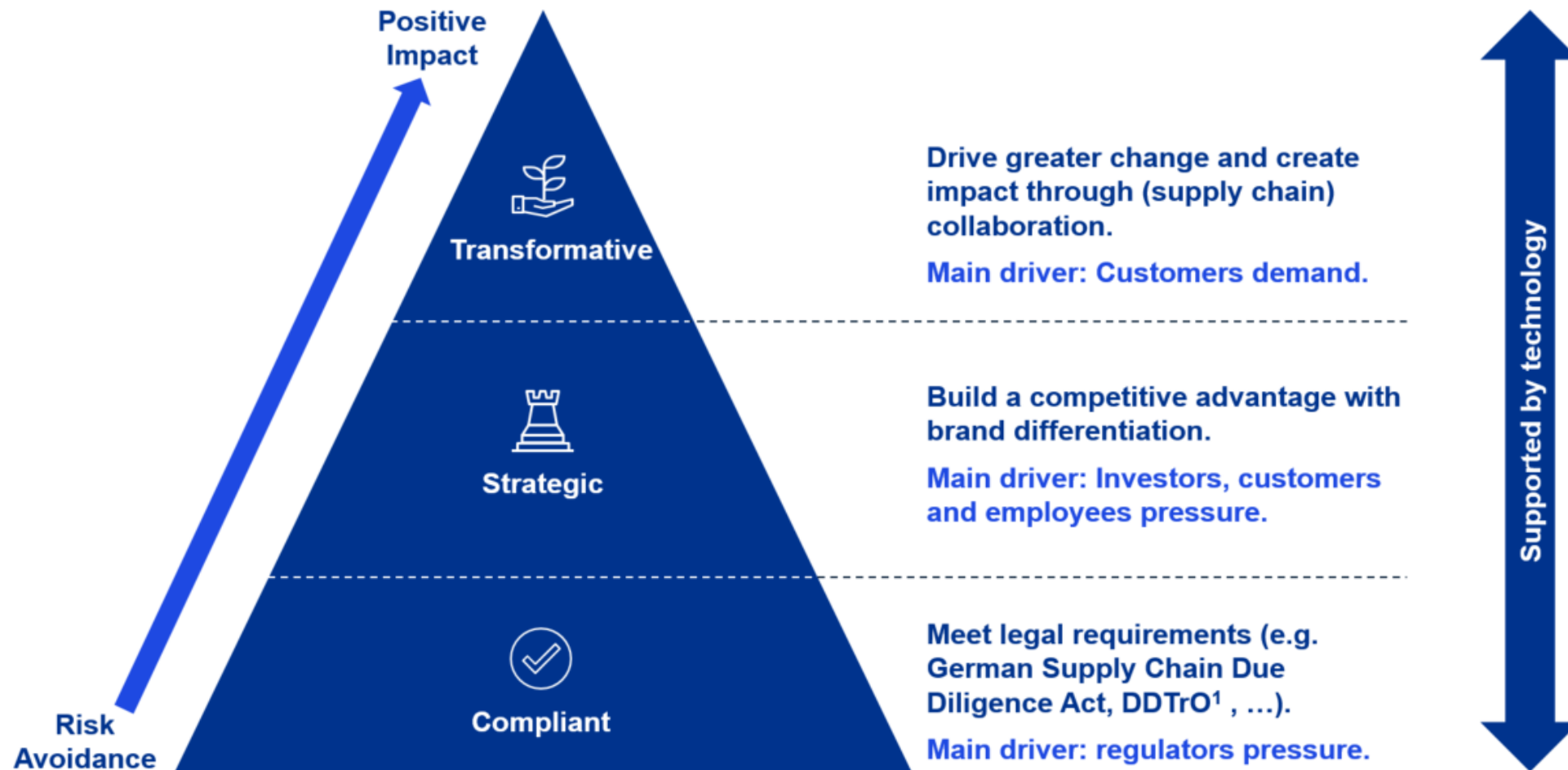


of survey respondents highlighting how “investing in responsible sourcing” is a priority in the next 18 months⁴

“In the next three to five years, we will see an increase in the adoption of digital supply chain technologies⁵”

Source: ¹Gartner Sustainability Survey 2020 ; ²KPMG Survey of Sustainability Reporting 2020 ; ³KPMG Adapt to new trends with supply chain transparency - Thought Leadership 2021 ; ⁴Gartner Future of Supply Chain Survey 2020 ; ⁵Gartner Predicts the Future of Supply Chain Technology - Insights Article 2022 ; *customers also includes consumers

Responsible sourcing approach differs based on a company's specific goals



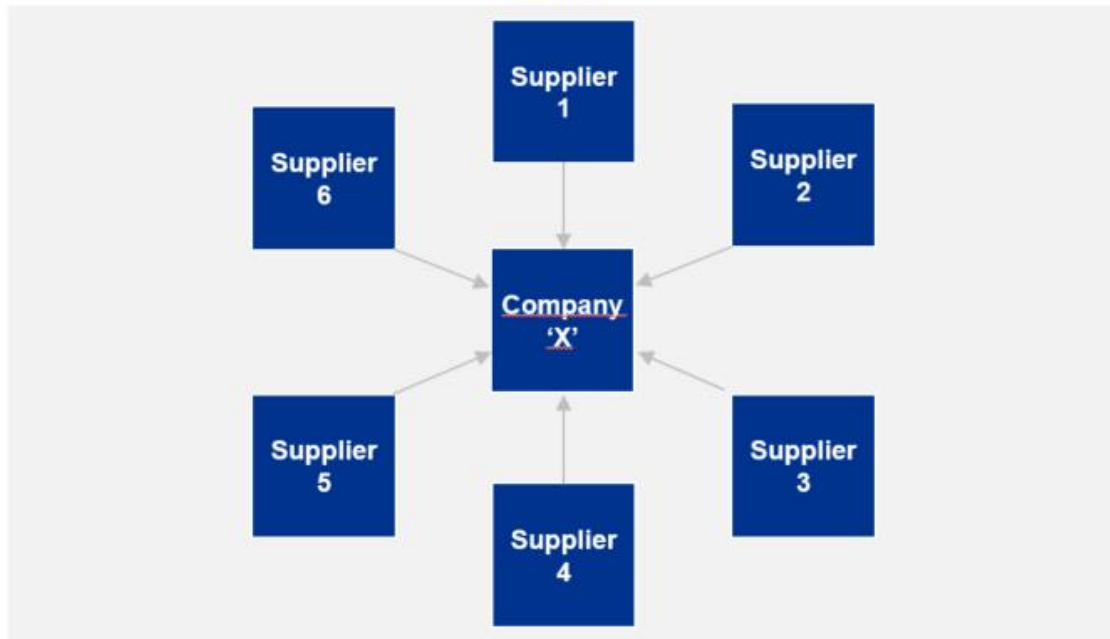
Source: Figure adapted from Gartner - Different Approaches to Responsible Sourcing
Key: ¹Ordinance on Due Diligence and Transparency in relation to Minerals and Metals from Conflict-Affected Areas and Child Labour

Technology outlook: centralised vs distributed platforms (simplified)

A **centralised database** is located, stored and maintained in a single location (e.g. MySQL, Oracle, Microsoft, ...). Different options can apply:

Option 1:

A company is the central point, suppliers can access to the platform with login details

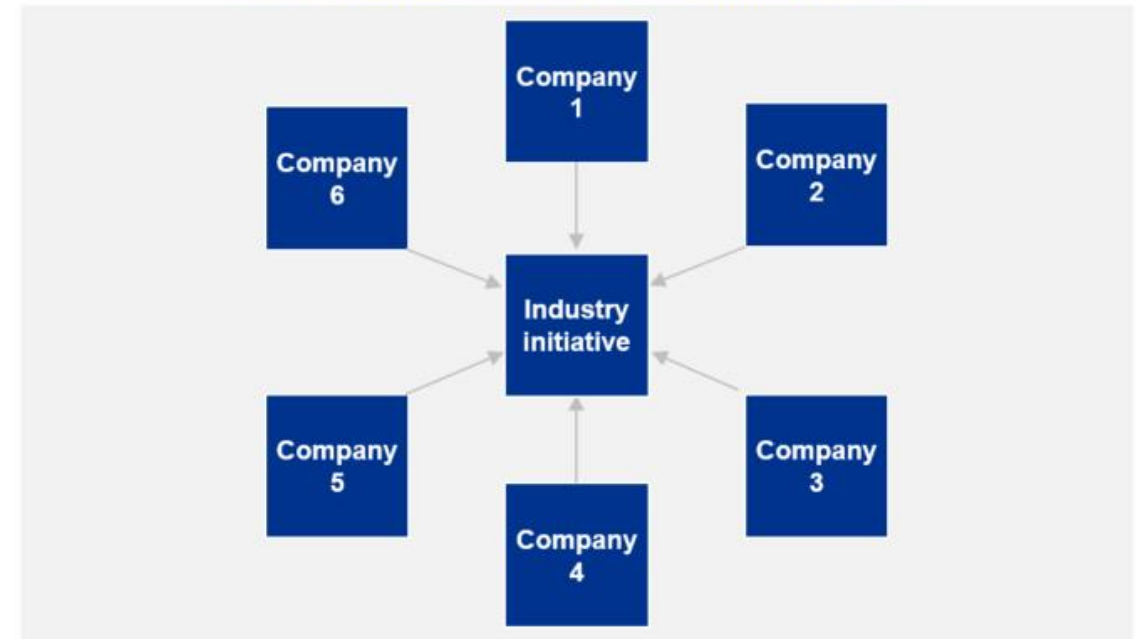


A company's suppliers log into the platform to share or access (authorized) data. Company 'X' sets data governance (who can see what) and, as owner of the platform, sees all the data.

Usually used by a company collecting supply chain insights, starting with their known suppliers and cascading it down the chain across multiple tiers.

Option 2:

An industry initiative or neutral party is the central point. Companies, peers or their suppliers can access to the platform with login details



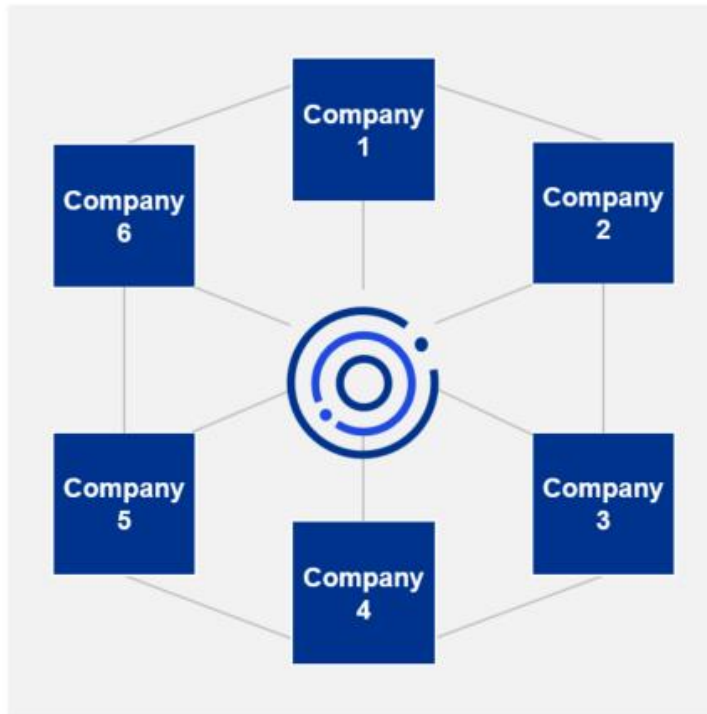
Companies log into the platform to share or access (authorized) data. The industry initiative (or a 'neutral party' e.g. ITSCI¹) owns the platform, host and sees all data, set governance and permission matrix.

An alternative is that the software provider, owner of the system, host the data where a group of customers decide on the platform evolution.

Key: ¹The Tin Supply Chain Initiative

Technology outlook: centralised vs distributed platforms (simplified)

A **distributed ledger** (e.g. Hyperledger fabric) is a set of replicated, shared and synchronized data spread across multiple sites, regions or participants. They enable trust between parties that may not naturally trust each other.



Only approved members can join the network, participate and upload transactions, based on a permission matrix.

Several nodes can be setup in the network to create copies of the ledger and maintain a single source of trust. With this structure, no single entity is the owner of the system. Governance is therefore key for success.

All participating nodes reach an agreement to establish a single source of trust for the ledger via a consensus. Once consensus is reached, the distributed ledger is updated and the latest version of the truth is (the agreed copy) appended on each node separately.

Data is owned by the company or organization that owns the data prior its upload to the platform or in case of 3rd party upload, by the original owner. Users can set permission for data governance (whom can see what).

Usually used in scenarios where collaboration with an ecosystem is needed and where trust between participants is an issue.

Lesson learned

Technology considerations

01

Needs will evolve over time so a solution should be chosen based on functionalities, interoperability and flexibility to adapt to companies' new requirements rather than technology itself.

Fit-for-purpose & track what you need

02

For traceability it is important to define the purpose and not track too much data. As it can reduce user friendliness, willingness to share information, and overall reduce adoption of your supporting supply chain.

Define value for suppliers

03

To get the supply chain partners to support more detailed traceability; requires that there needs to be value for the suppliers to provide the extra information.

What is in it for them?

Think big, start small and build it up

04

When designing the required system and processes its good to think big. Yet when building it its better to build something small and expand to avoid getting stuck in design for too long with business value.

Contact and additional resources



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RE-SOURCING Virtual Conference November 2022

Reality Check on Responsible Sourcing
Trends, obstacles and opportunities

Day 2 | Session 4 - Chasing Unicorns?

How Able is the Mining Sector to Extract Responsibly
Sourced Minerals for the Green Economy?



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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Input presentation

Efforts and impact of sustainability in the mining sector - Some food for thought

Masuma Farooki

MineHutte



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Chasing Unicorns?

How able is the mining sector to extract responsibly for the green transition?

Dr. Masuma Farooki

Consulting Director, MineHutte

*Reality Check on Responsible Sourcing - Trends, obstacles & opportunities
9 November, 2022 – Re-Sourcing Project Virtual Conference*



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What is a unicorn?

A legendary creature that is highly desirable but difficult to find

No one is actually sure whether it exists or not

Associated with good & purity



The Mining Supply Unicorn Sustainability & Responsible Sourcing





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The Mining Supply Unicorn Sustainability & Responsible Sourcing





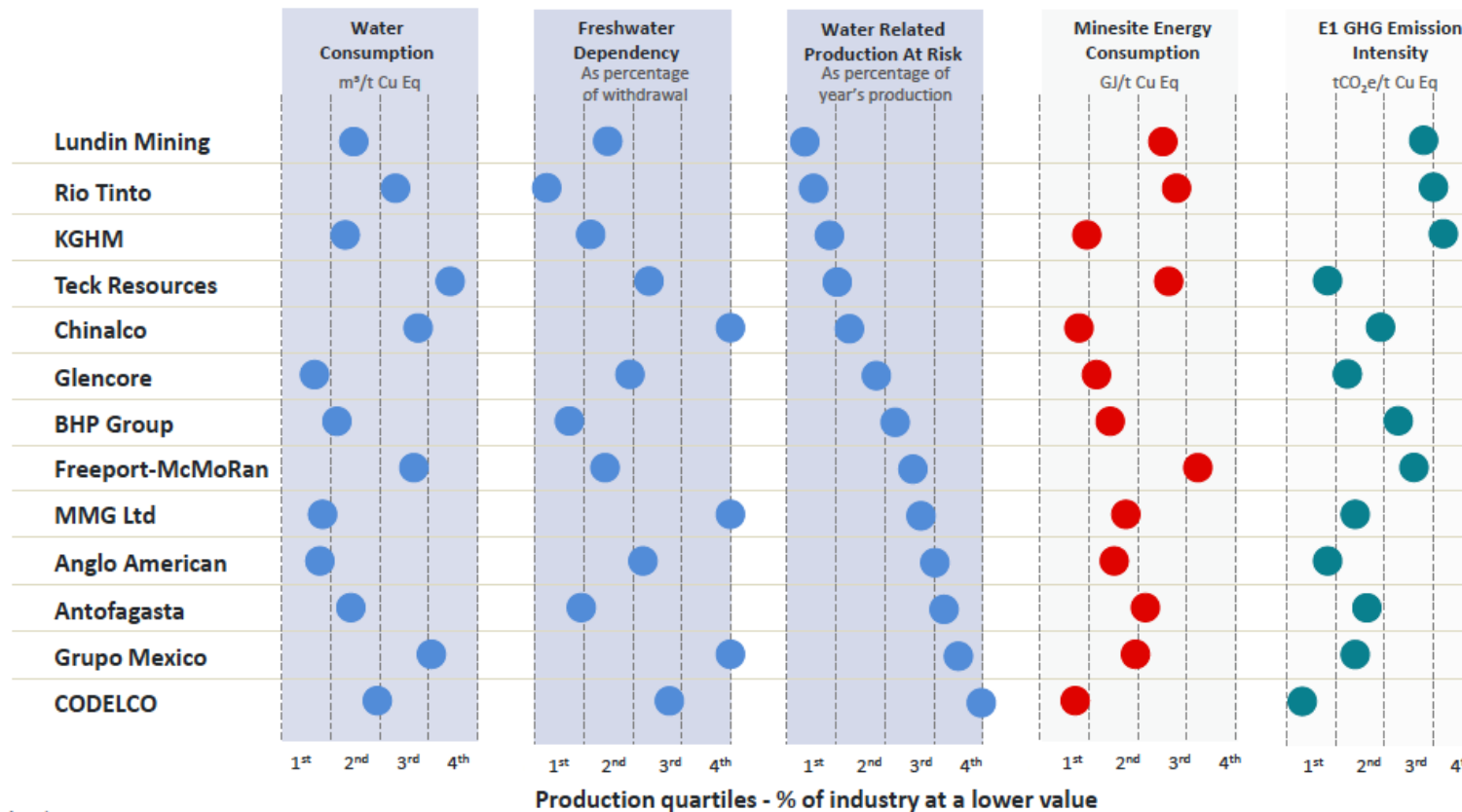
The Mining Supply Unicorn Sustainability & Responsible Sourcing





Monitoring mining company performance

COPPER MINERS: WATER RISK, GHG AND ENERGY INTENSITY



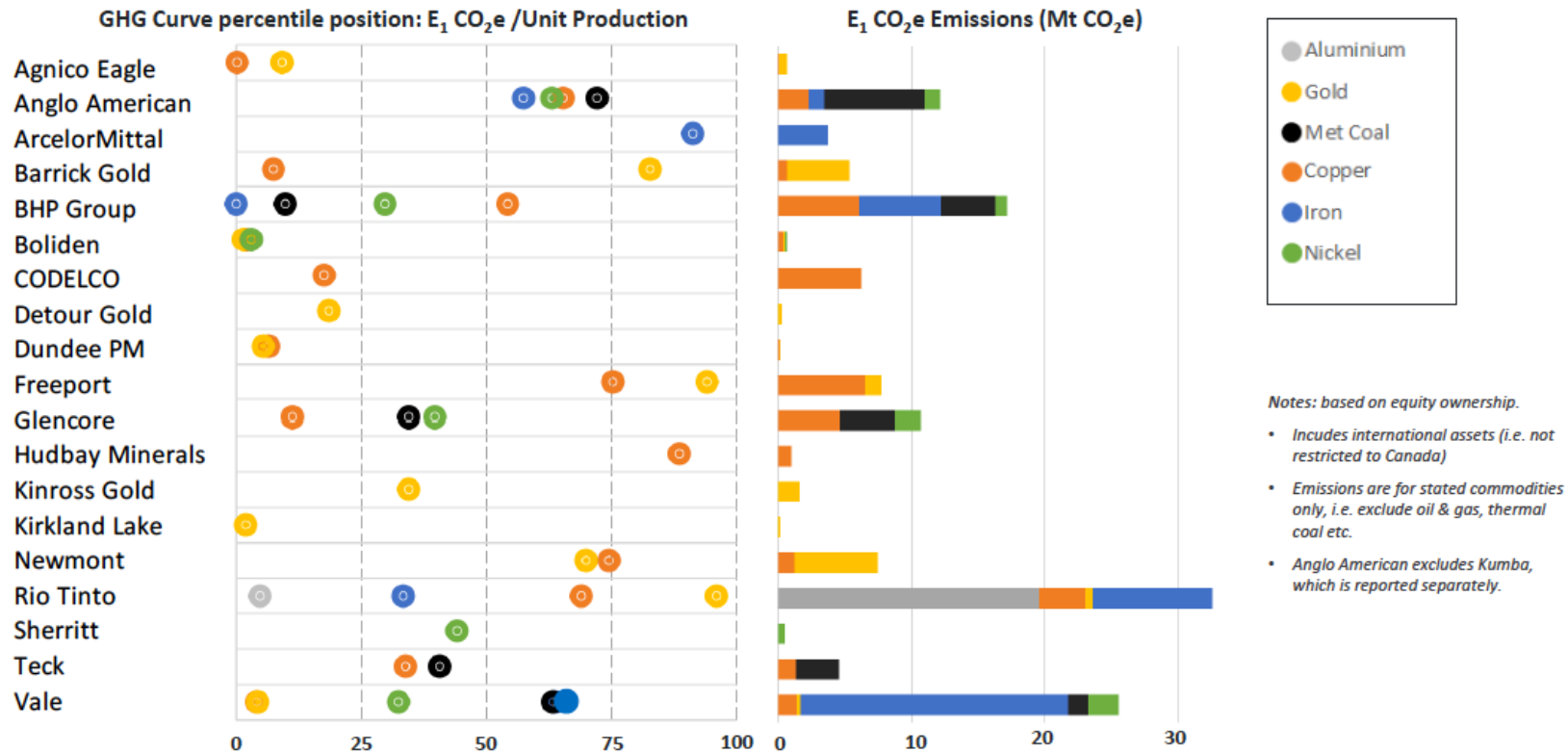
arm Associates

SKARN
ASSOCIATES

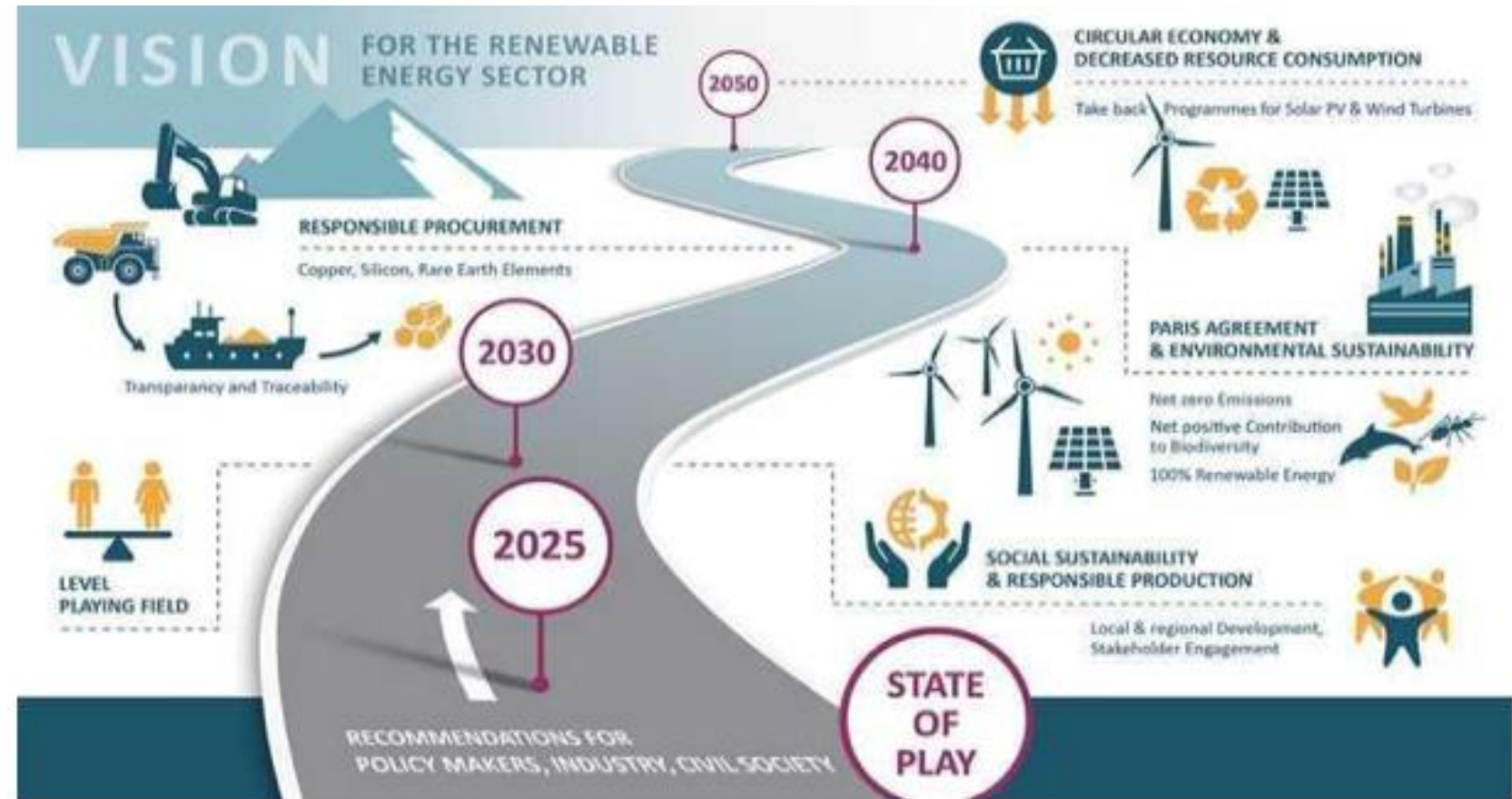


Monitoring mining company performance

MAJOR COMPANIES — E₁ GHG EMISSIONS BY COMMODITY



Green Transition



Green Transition





Trouble in our Lands



Sustainability, yeah sure – we have a report for that!



Financial Times mobile app interface. The header shows the FT logo and navigation icons. The main headline is 'Amnesty warns on use of child labour in cobalt mining' with a sub-headline 'Companies 'not doing enough' to ensure ethical supply of metal used in batteries'. The article is categorized under 'DR Congo' and has an 'Add to myFT' button.

FINANCIAL TIMES

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DR Congo + Add to myFT

Amnesty warns on use of child labour in cobalt mining

Companies 'not doing enough' to ensure ethical supply of metal used in batteries



Financial Times mobile app interface. The header shows the FT logo and navigation icons. The main headline is 'Glencore ordered to pay £276mn for Africa oil bribery' with a sub-headline 'UK judge says mining group engaged in 'corporate corruption on a widespread scale''. The article is categorized under 'Glencore' and has an 'Add to myFT' button.

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Glencore + Add to myFT

Glencore ordered to pay £276mn for Africa oil bribery

UK judge says mining group engaged in 'corporate corruption on a widespread scale'



Financial Times mobile app interface. The header shows the FT logo and navigation icons. The main headline is 'Congo, child labour and your electric car' with a sub-headline 'Informal workers produce almost a third of the country's cobalt. Can mining groups address the problem?'. The article is categorized under 'The Big Read' and 'Mining' and has an 'Add to myFT' button.

FINANCIAL TIMES

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The Big Read Mining + Add to myFT

Congo, child labour and your electric car

Informal workers produce almost a third of the country's cobalt. Can mining groups address the problem?



Financial Times mobile app interface. The header shows the FT logo and navigation icons. The main headline is 'Vale agrees to \$7bn settlement over Brazil dam disaster' with a sub-headline 'Deal over Brumadinho breach that killed 270 people is Latin America's largest such settlement'. The article is categorized under 'Vale SA' and has an 'Add to myFT' button.

FINANCIAL TIMES

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Vale SA + Add to myFT

Vale agrees to \$7bn settlement over Brazil dam disaster

Deal over Brumadinho breach that killed 270 people is Latin America's largest such settlement

Sustainability, yeah sure – we have a report for that!

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Despite diversification efforts, fewer than 1 in 5 mining leaders are women

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BLOG
General Elections: How the elections will shape state-level energy policy

BLOG

Despite diversification efforts, fewer than 1 in 5 mining leaders are women



Author Taylor Kuykendall, Katie Darden
Theme Energy, Metals



The Big Read Sahel + Add to myFT

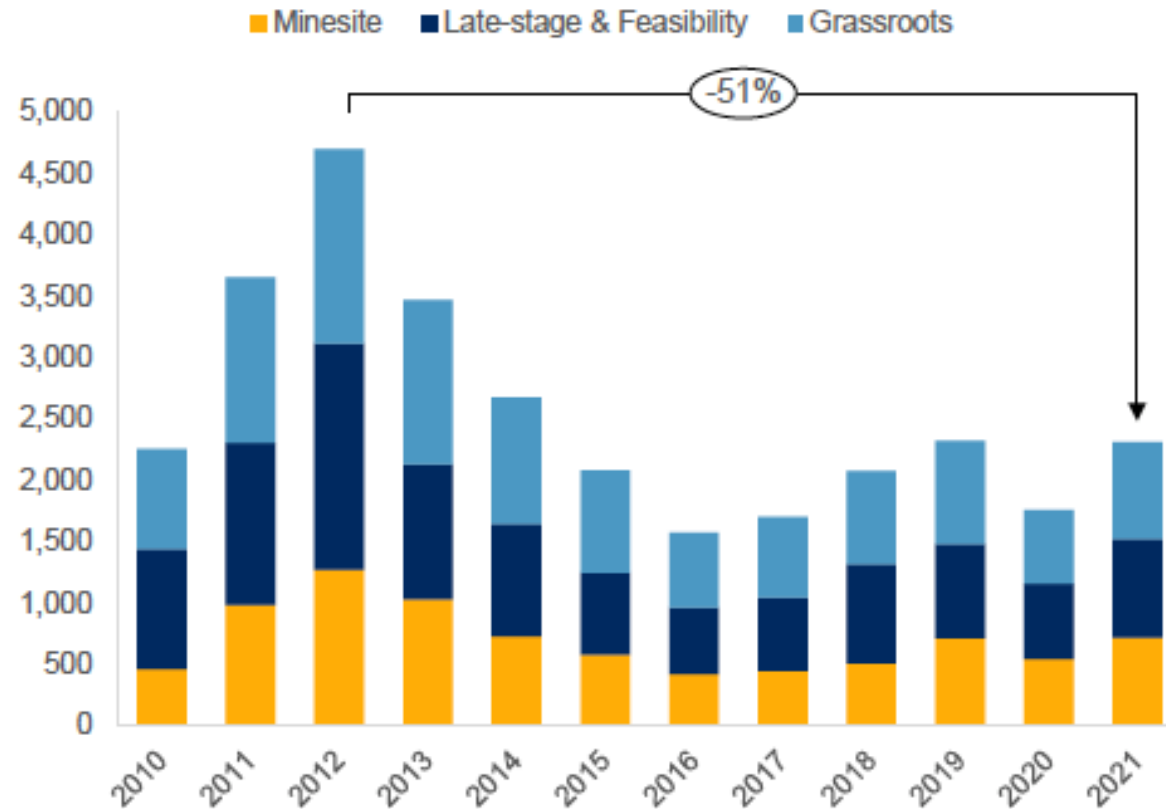
Instability in the Sahel: how a jihadi gold rush is fuelling violence in Africa

Armed groups vie for control of mines and the lucrative trade in the precious metal, which ends up being refined in Dubai



Do we have mineral
supply in place?

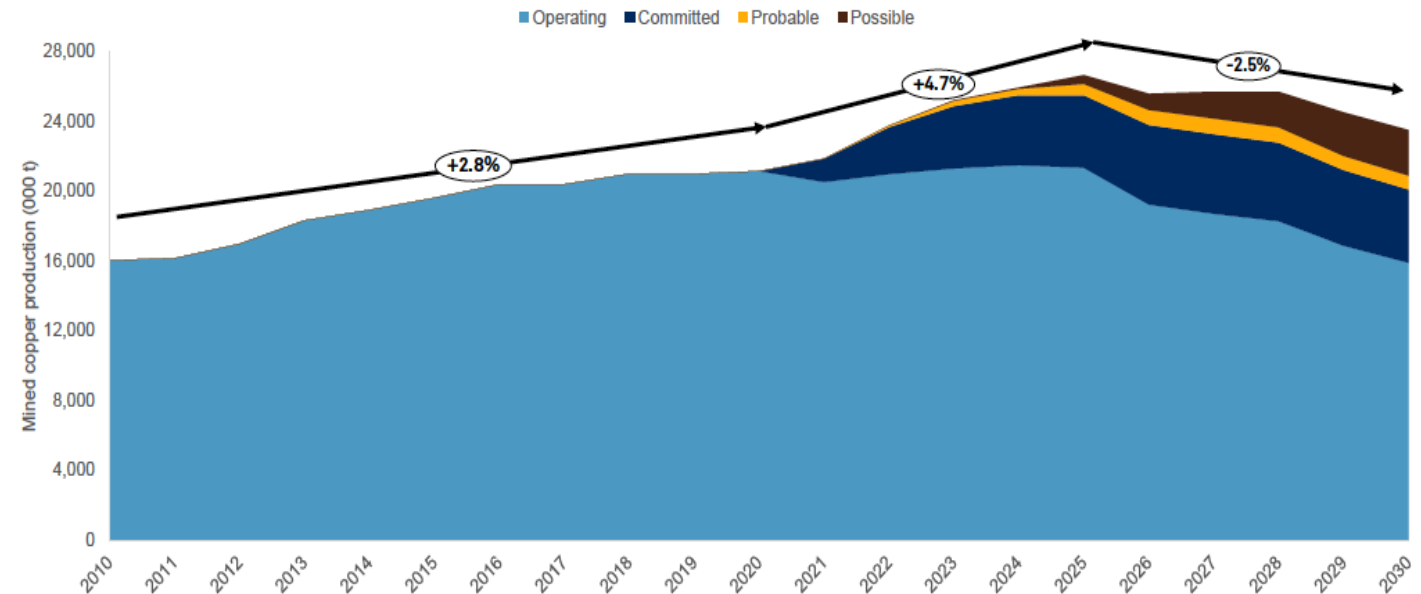
Copper exploration well below peak years





Do we have mineral supply in place?

Near-term supply strong; market to struggle to meet demand post-2025



Data as of July 13, 2022.
Source: S&P Global Market Intelligence

S&P Global
Market Intelligence

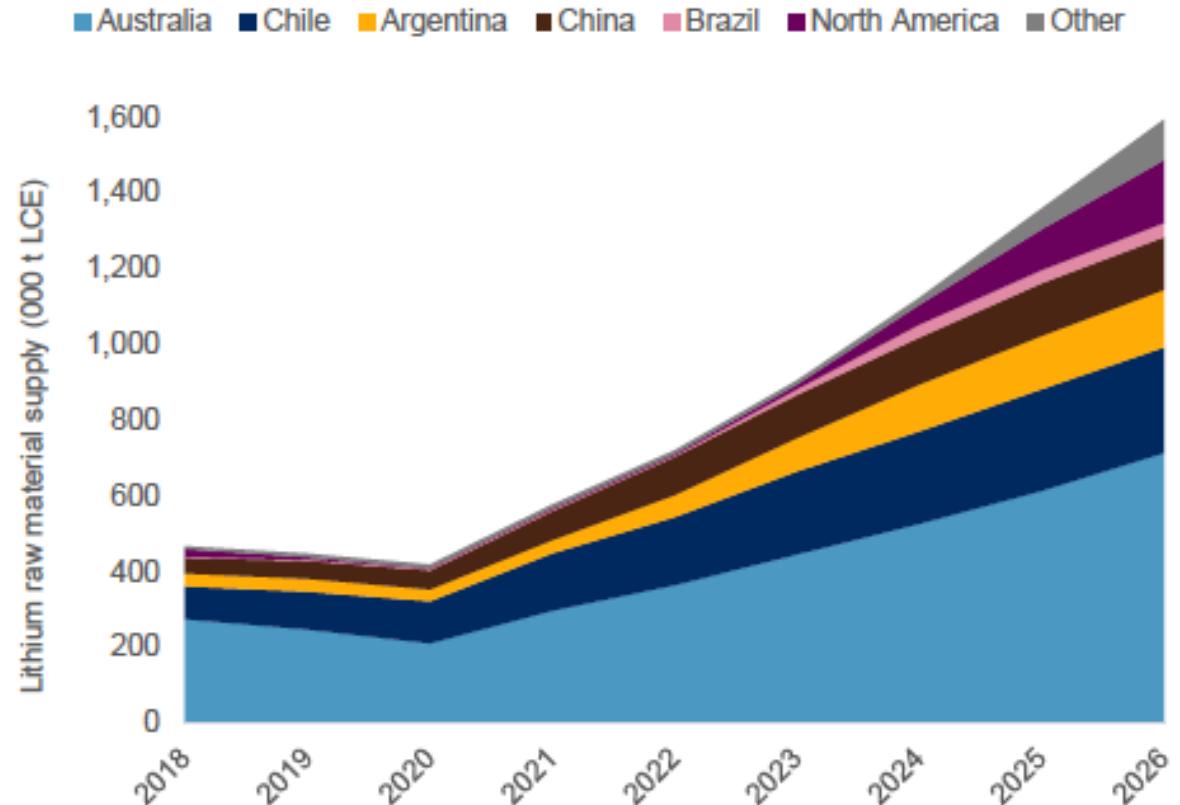
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19



Lithium raw material supply forecast to rise 176.0% in 2021-26, led by Australia, Chile

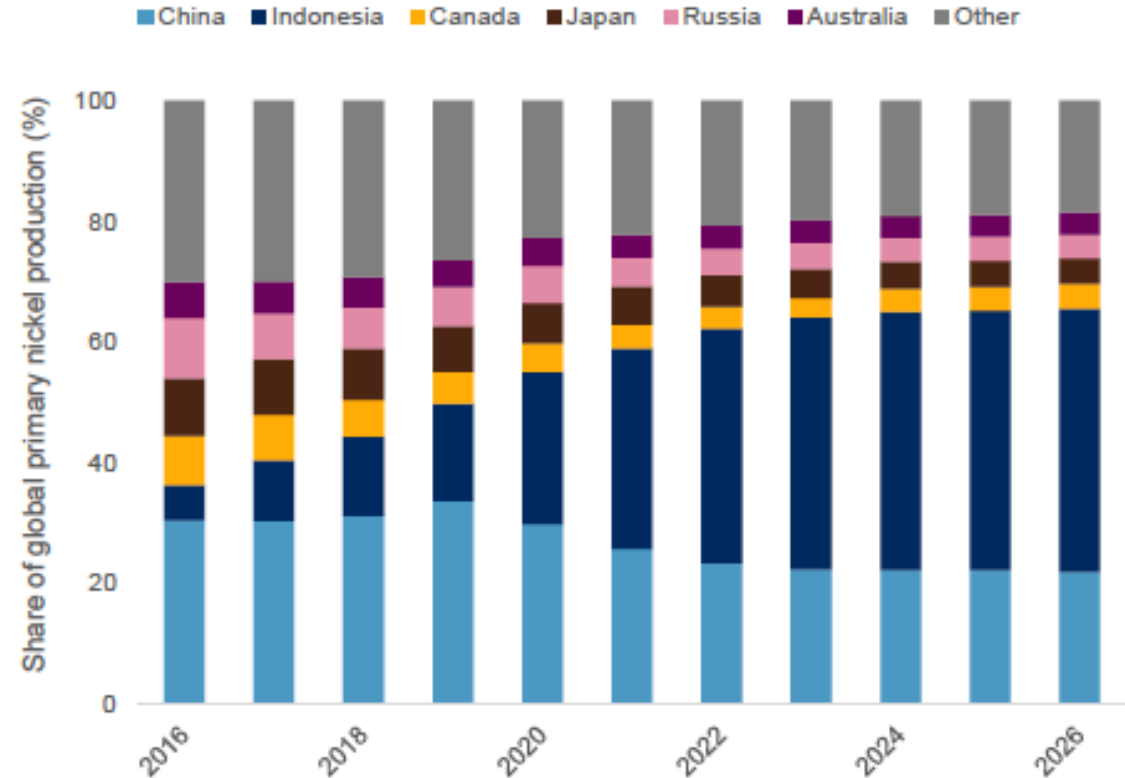
Do we have mineral supply in place?





Indonesia to account for 43.6% of global primary nickel output by 2026

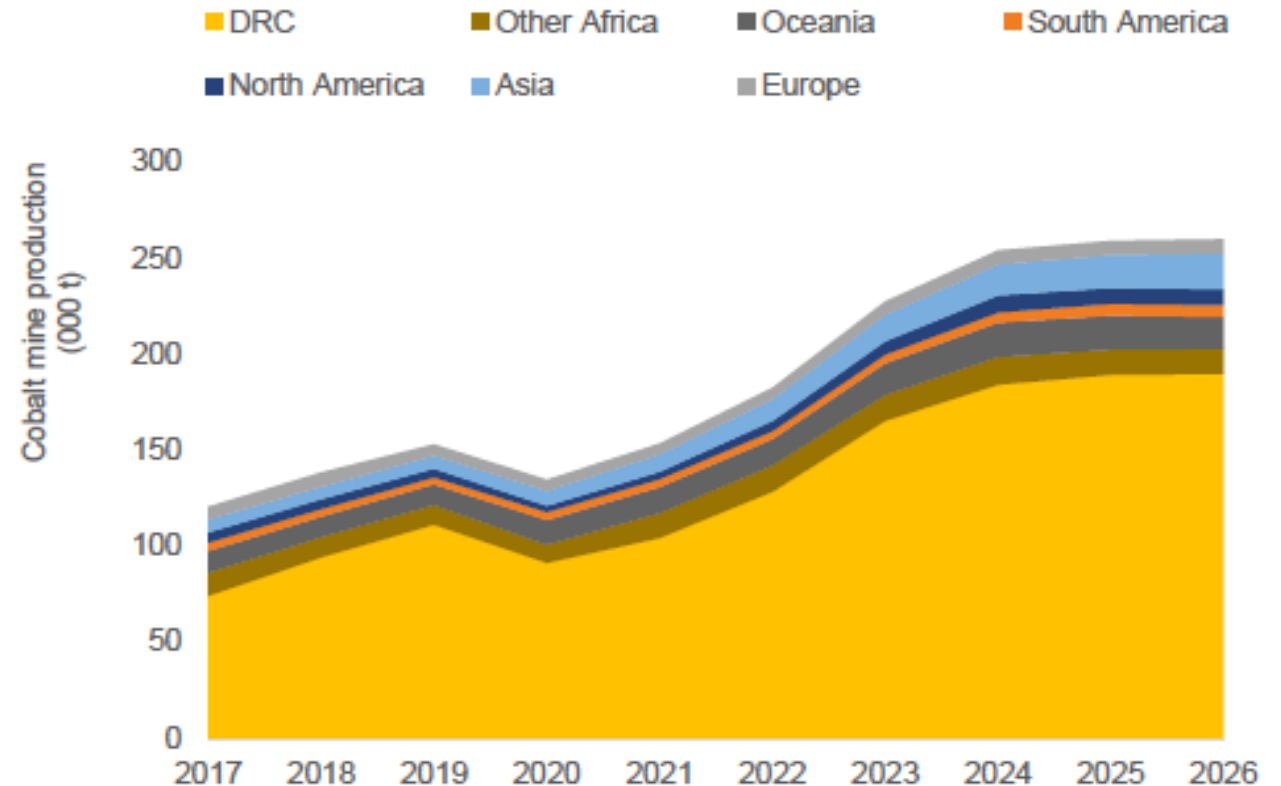
Do we have mineral supply in place?





Do we have mineral supply in place?

Cobalt mine supply growth to slow from 2025 onward on lack of pipeline projects



Data as of Aug. 23, 2022.

DRC = Democratic Republic of Congo

Sources: S&P Global Market Intelligence; Company announcements



So is a sustainable,
responsibly extracted
mineral supply a
mythical creature –
to be talked about
but never found?



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THANK YOU
for your attention!