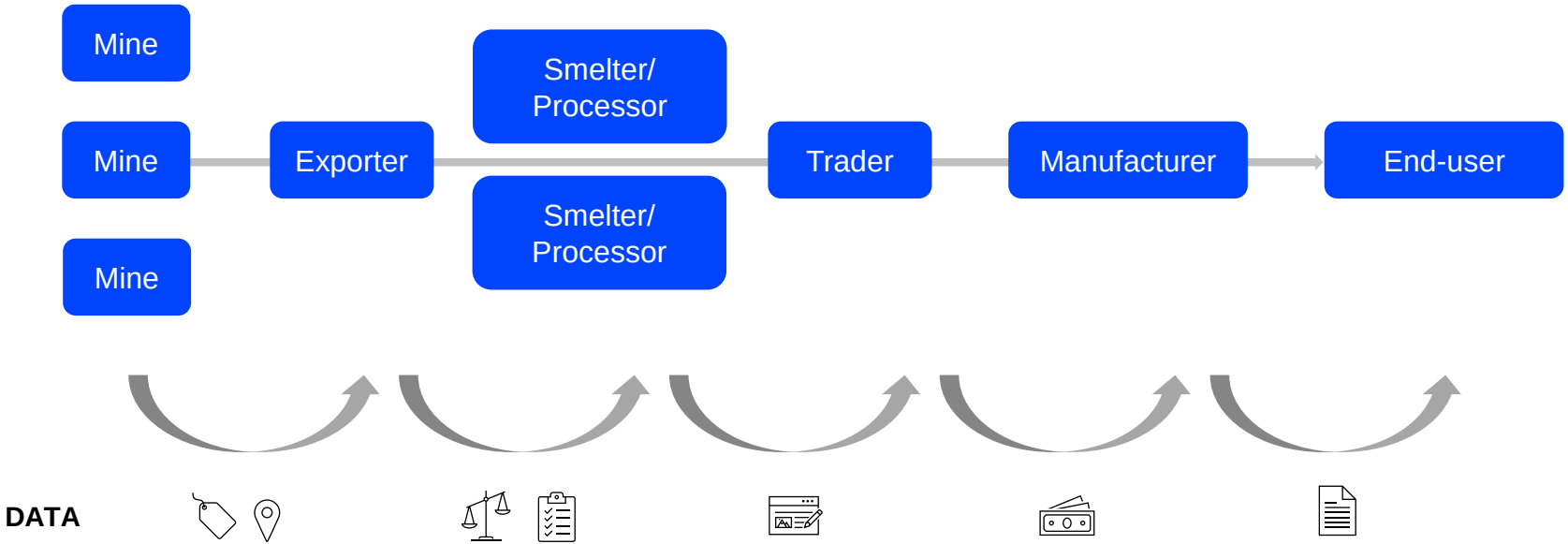
International Energy Agency

The Role of Traceability in Critical Mineral Supply Chains: Launch Webinar

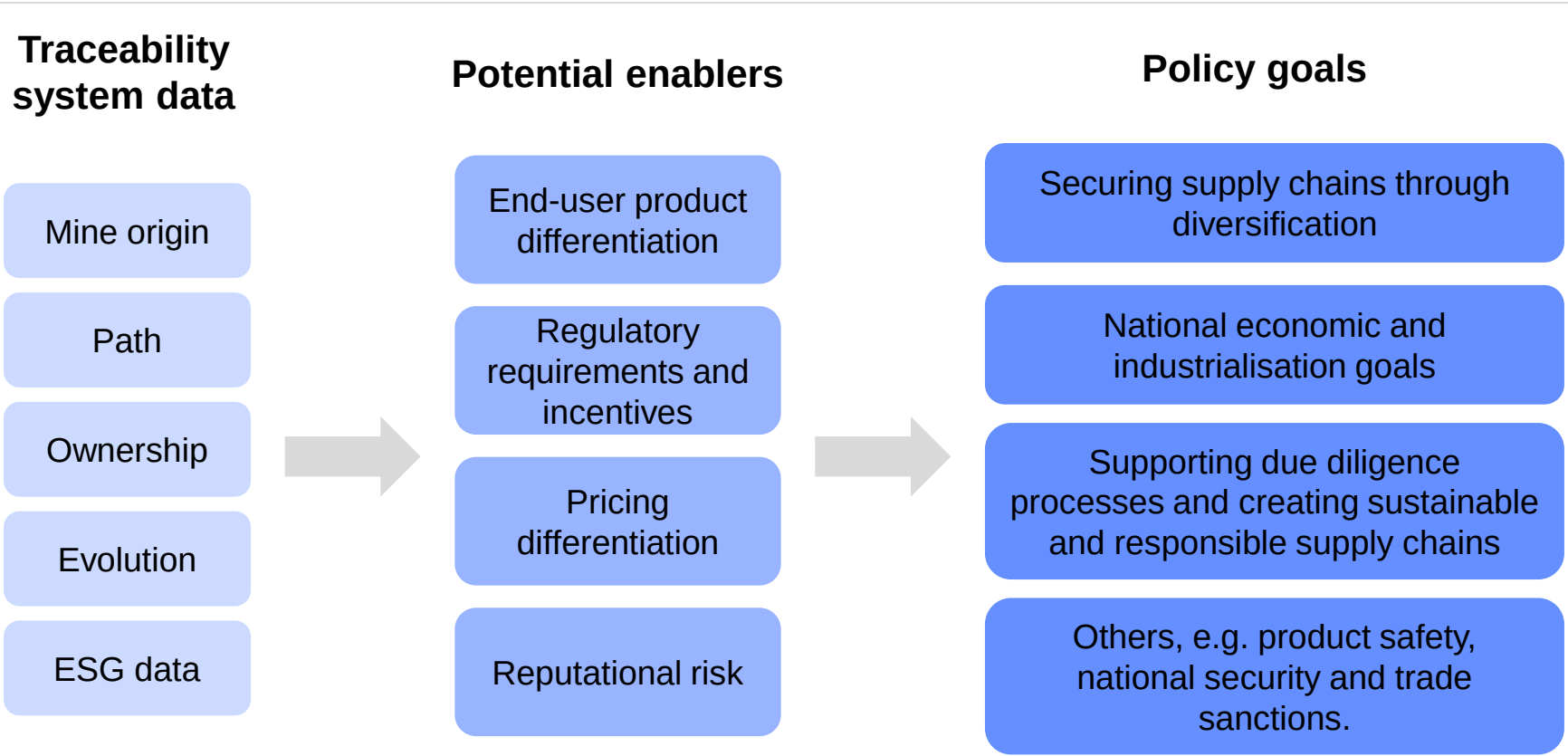
March 6, 2025

What is traceability?



Traceability allows for movement of data throughout a supply chain; at a minimum, for critical minerals this should include data on: (1) mine origin; (2) geographical path; (3) chain of custody (ownership); and (4) physical evolution.

Traceability can support key policy objectives



How traceability relates to other concepts

Due diligence

- Process that enterprises should carry out to identify, prevent and mitigate adverse impacts in the supply chain, including impacts on the environment, human rights, labor rights and governance.

Chain of custody

- Sequence of entities that have at one point handled the product in question.

Supply chain mapping

- Process of documenting information regarding an operator's supply chain network in order to create a representation (visual or not) of that network.

Product transparency

- Process of disclosing information to the public or to relevant stakeholders regarding a particular product.

Regulations encouraging traceability are on the rise

Due diligence

- Supply Chains Act (CAN, GER), CSDDD

Platforms / product passports

- IDN SIMBARA, COL Traceability Platform, CHN Rare Earths Management System
- EU battery regulation, CHN Battery ID System

Economic incentives

- US IRA, EU-UK Rules of Origin for EV batteries

Circularity requirements

- CRMA, India Battery Waste Management Rules

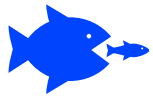
National Security

- US DFARS

Implications

Increased compliance obligations

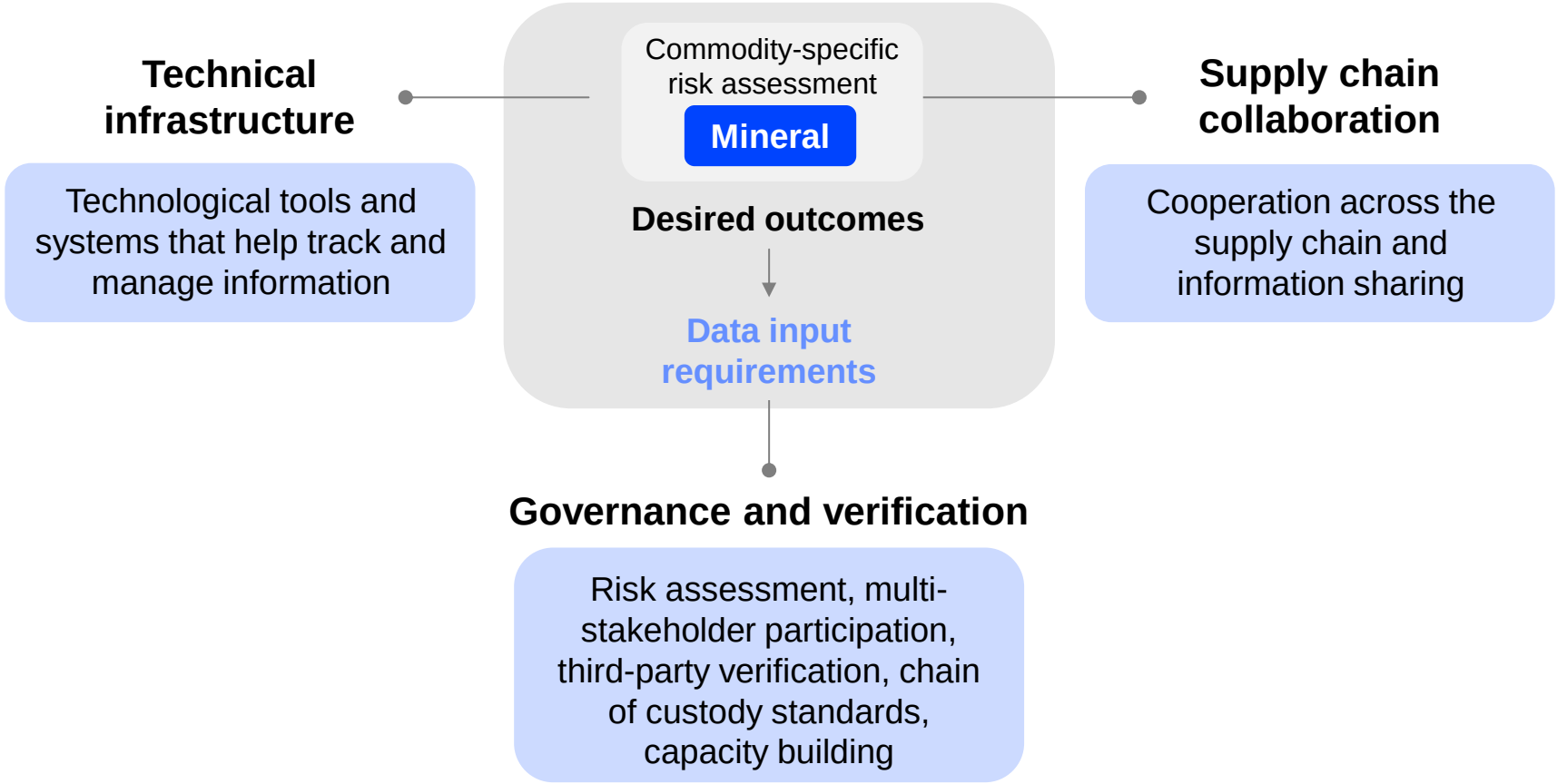
Market access and competitiveness



Supply chain transparency

Tools needed to monitor adherence

An effective traceability system has four key components



Mineral-specific considerations

Copper

- Complex and global supply chains, feeding into many end-uses
- Often blended

Lithium

- Impacts and risks between type of brines sourced from differ
- Extensive processing

Nickel

- Concentrated market where information may be difficult to obtain
- Intermediates blended in further processing for batteries

Graphite

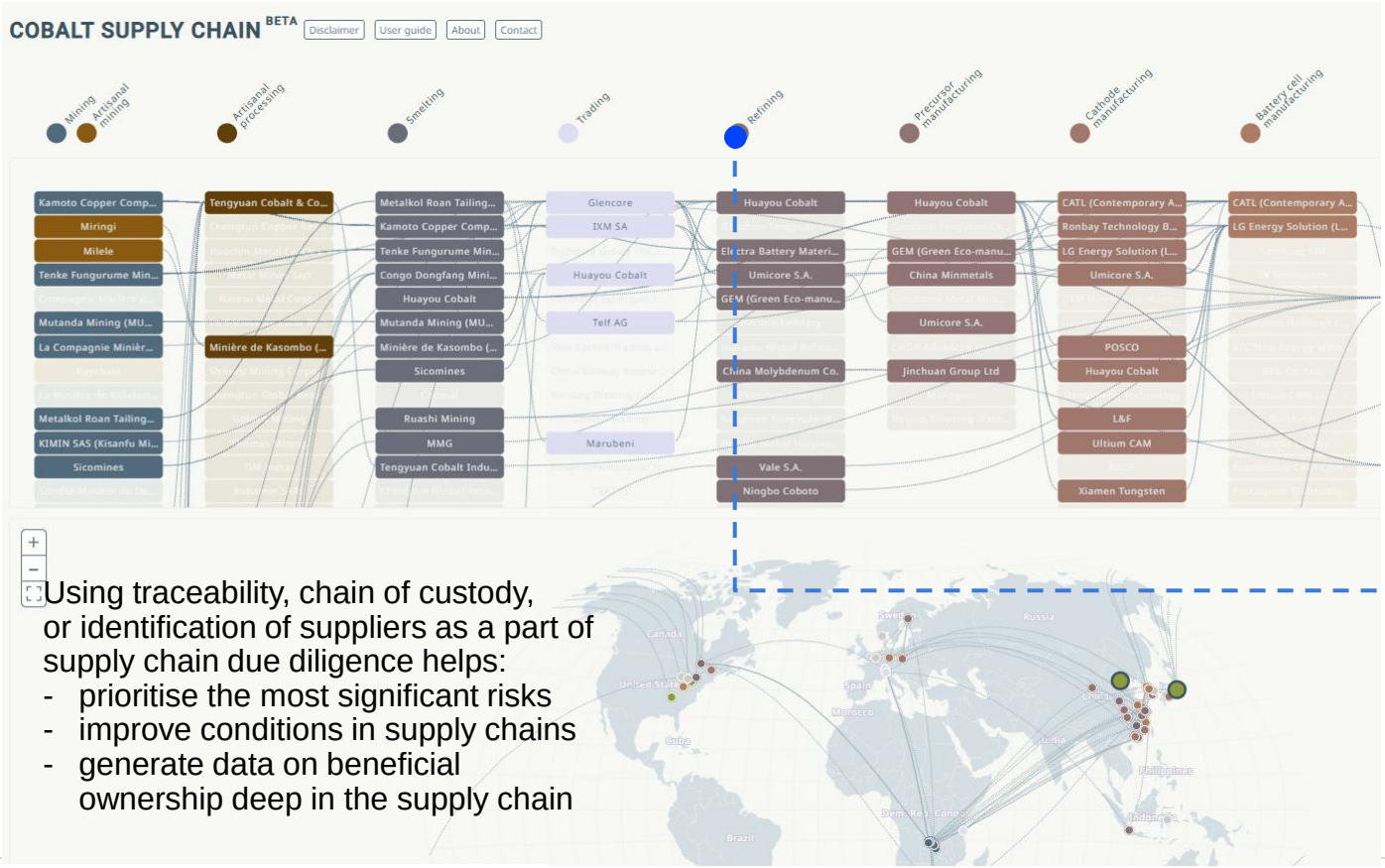
- Concentrated market where information may be difficult to obtain
- Complex processing for battery-grade graphite; synthetic and natural graphite blended

REEs

- Midstream production concentrated in markets where information may be difficult to obtain
- Different REEs often extracted together and require complex separation

Different characteristics of critical mineral supply chains include the geographical location and concentration of operations, the technical complexity of processing and the number of companies operating.

Traceability and due diligence in OECD standards on responsible business conduct



Using traceability, chain of custody, or identification of suppliers as a part of supply chain due diligence helps:

- prioritise the most significant risks
- improve conditions in supply chains
- generate data on beneficial ownership deep in the supply chain

1 Due diligence management systems

2 Identify risks

3 Respond to risks

4 Audit at control points

5 Report on due diligence

Source: Resource Matters

Lessons learned from the implementation of traceability initiatives

Risk-based approach: Traceability systems must take into account the risk of fraudulent or inaccurate data, with some supply chains requiring more structured verification than others.

Barriers to access and incentives: Traceability systems must take into account the structural barriers faced by smaller economic actors in terms of formal access to finance and digital infrastructure.

Interoperability: Lack of interoperability between systems can be a significant impediment for end-to-end traceability.

Type of data: Traceability systems can include certain information relating to sustainability. Some of this data may be relatively easy to quantify and share along the supply chain, while other data may require additional verification.

Quality of data: It is just as important to guarantee the reliability of the data as it is to implement secure methods for exchanging information.

Cross-border supply chains: In cross-border supply chains, traceability can be hindered by limited access to digital technology in least-developed countries, the reluctance of midstream operators to pass on information about upstream activities, or data protection laws prohibiting the disclosure of traceability data.

Government action can boost effective mineral traceability

1. Determine the **policy objectives** that traceability should help achieve and understand the supply chain context.
2. Taking policy objectives into account, choose which **products** to focus on.
3. Determine which **information** operators should collect and share.
4. Considering the supply chain context, choose which **operators** to focus on.
5. Promote the development and use of **interoperability** protocols.
6. Establish **trust mechanisms**, for example through verifiable credentials.
7. Create **incentives for increasing traceability**, including economic incentives (such as funding arrangements and tax credits) as well as regulatory requirements.
8. Engage with **stakeholders in foreign jurisdictions** to ensure there is supply chain collaboration and to promote data-sharing.

http://iea.li/traceability