

The impact of chemicals management on value chains: Cobalt as a case study

Cobalt Congress 2026

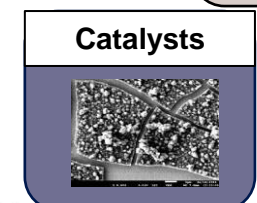
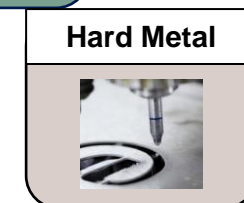
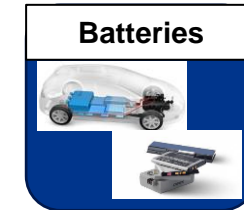
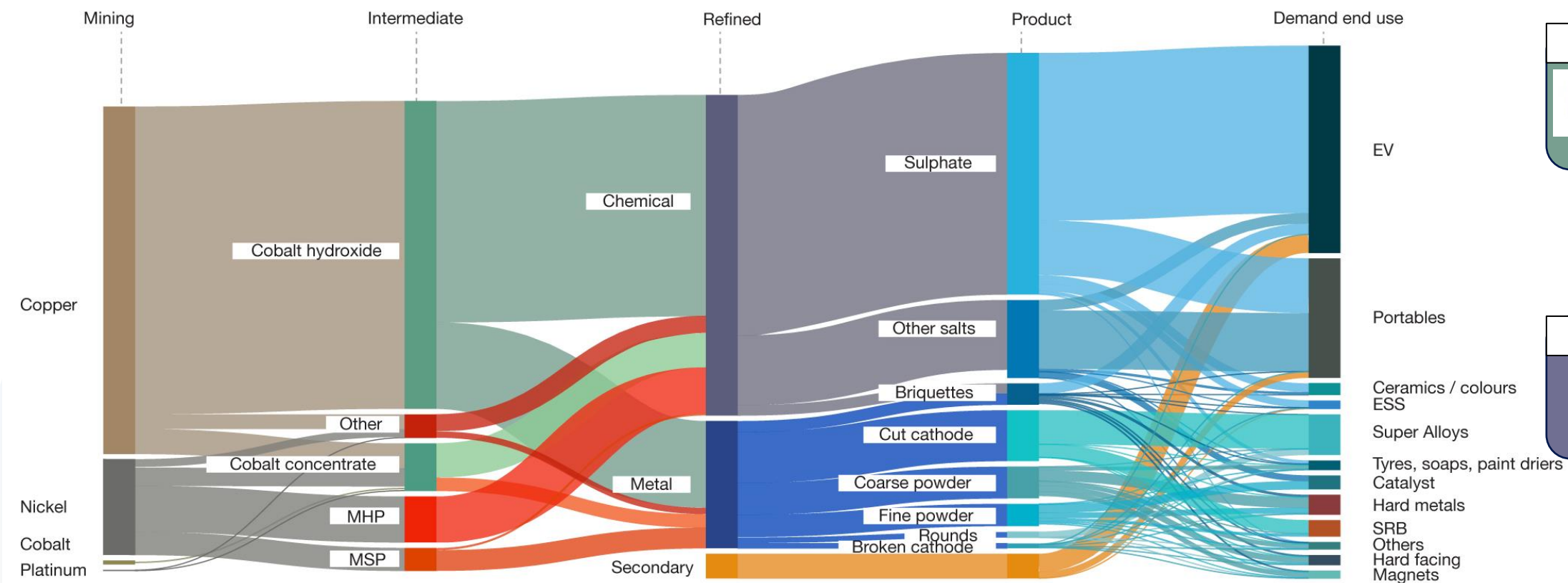


Cobalt is a versatile element with a
wide-reaching value chain

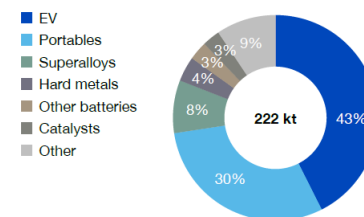
CI Members Represent All Parts Of The Chain



The Cobalt Value Chain



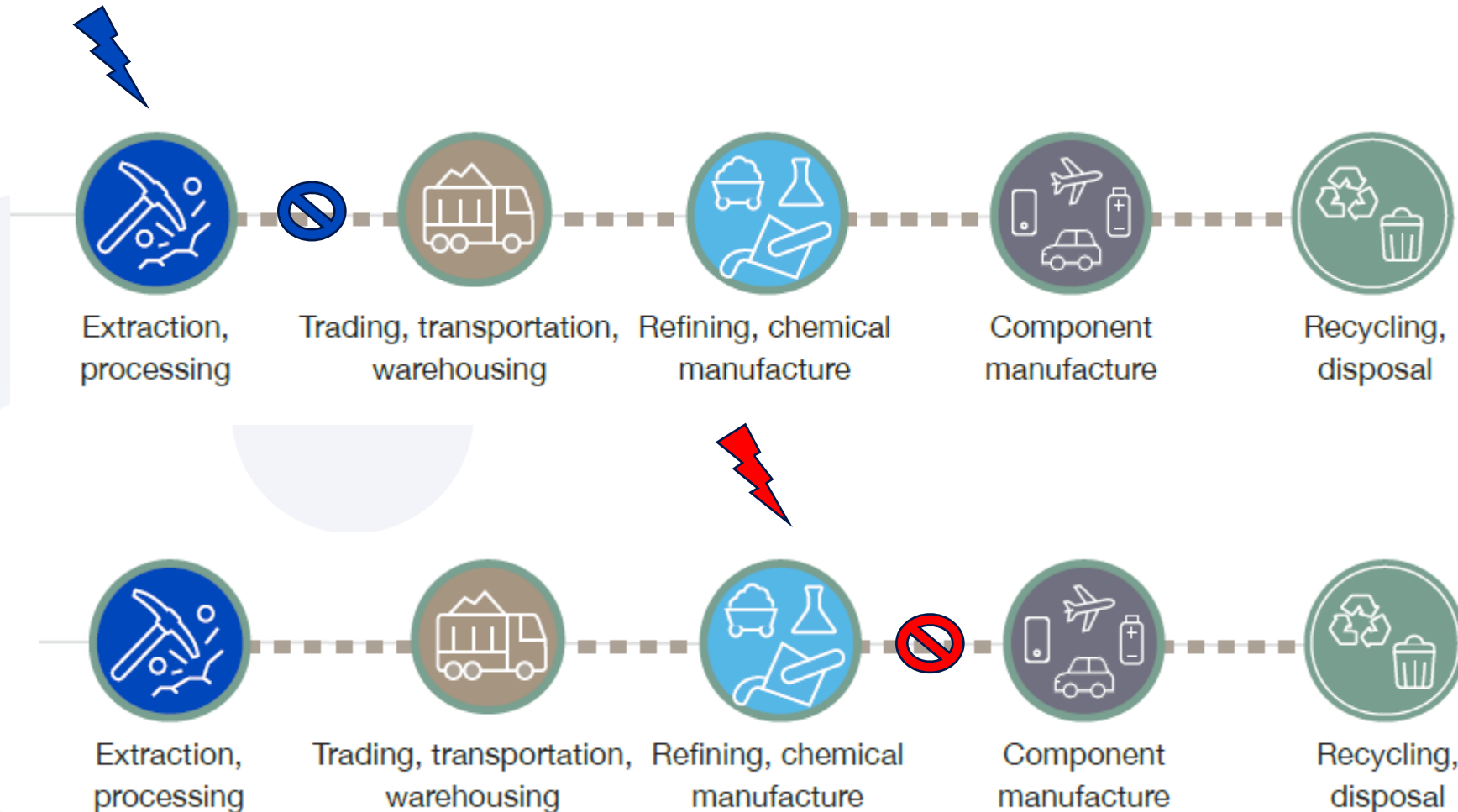
Source: Cobalt Market Report 2023. Data provider: Benchmark Mineral Intelligence.



Data: Benchmark Mineral Intelligence – Cobalt Forecast.

Note: Other minor applications include ceramics, colours, hard facing uses, tyres, soaps, paints and magnets.

Stages In The Supply Chain Are Dependent On One Another



Chemicals management is needed at every stage in the chain.
= A proactive and risk-based approach is needed to ensure the chain fully operates.

Example of Cobalt Industry Data On the EU Value Chain



Covering:
30 substances
24 major uses



Estimated:
7,000 companies
9,000 sites
641,000 FTE Workers*

*~ 72,000 workers exposed



Amount of cobalt and cobalt
substances used:
177,000 tonnes/year



Estimated current market
value of substances
manufactured in EU-27:
€7.6 Billion

Use a risk-based approach for chemicals management

Risk

=

Hazard

×

Exposure

A risk based approach looks at the likelihood that an inherent property of a substance (hazard) could occur (exposure).

It can incorporate the essential nature of cobalt.

It can use information gained from decades of safe handling and use.

It can use the best scientific information available.



Metals require a unique approach
to chemicals management

Why Are Metals Special?

Metals naturally **occur**

Many found in earth's crust

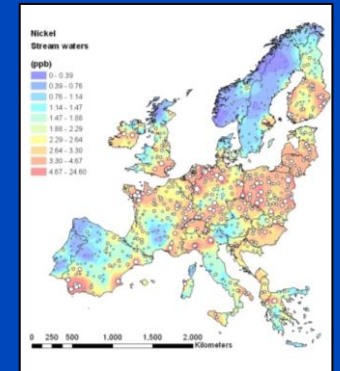
Living things **adapt** to metals

Sequestration, clearance, tolerance

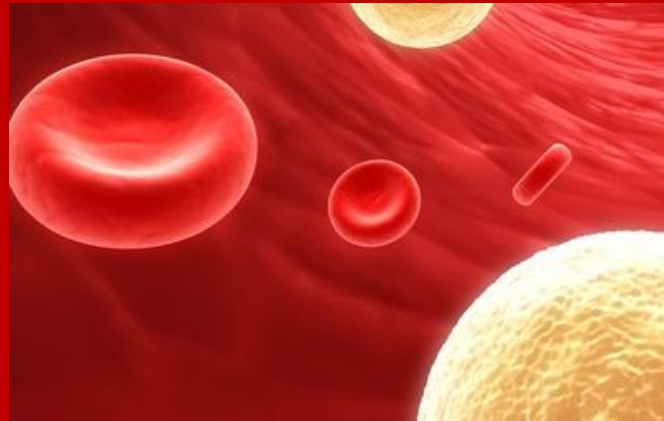
Metals are **essential**

Some essential for plants, animals, and/or other organisms

Metals **interact** with other substances



Essential for health of humans



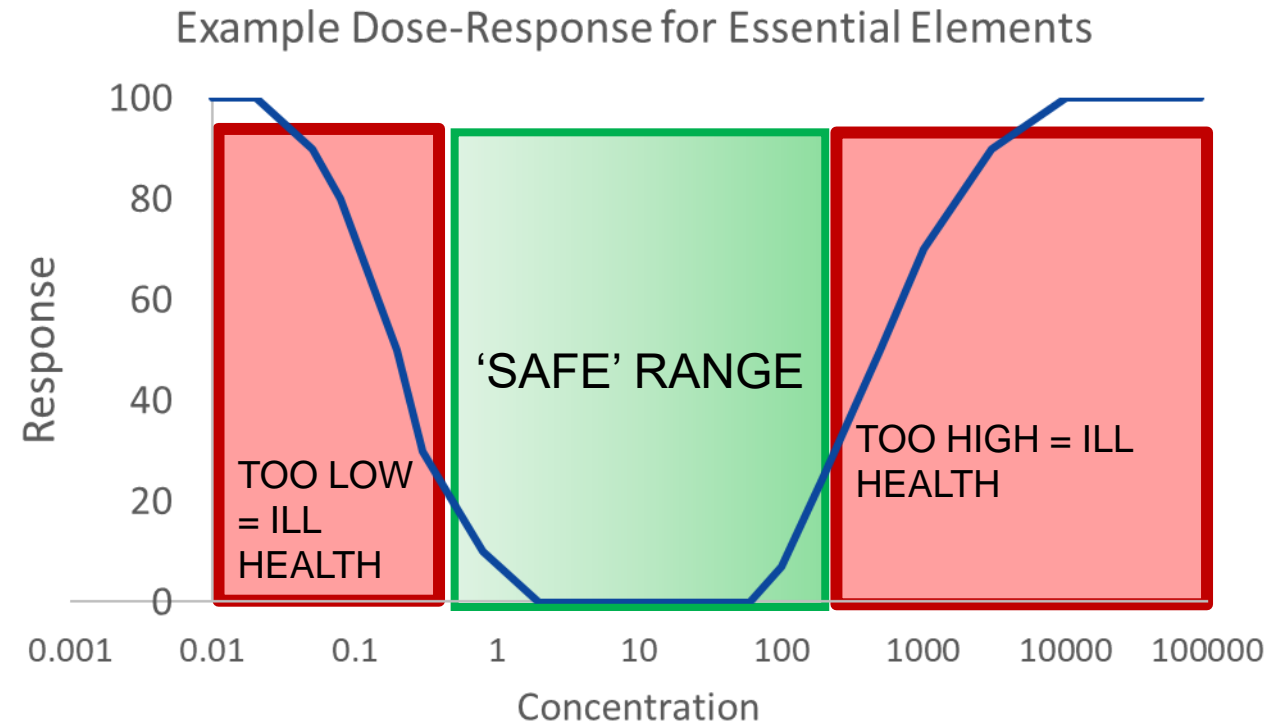
A photograph of a brown and white cow grazing in a green field. The cow is facing left, with its head down. It has a white face and legs, and a brown body with white patches. The background is a green field with some trees in the distance.



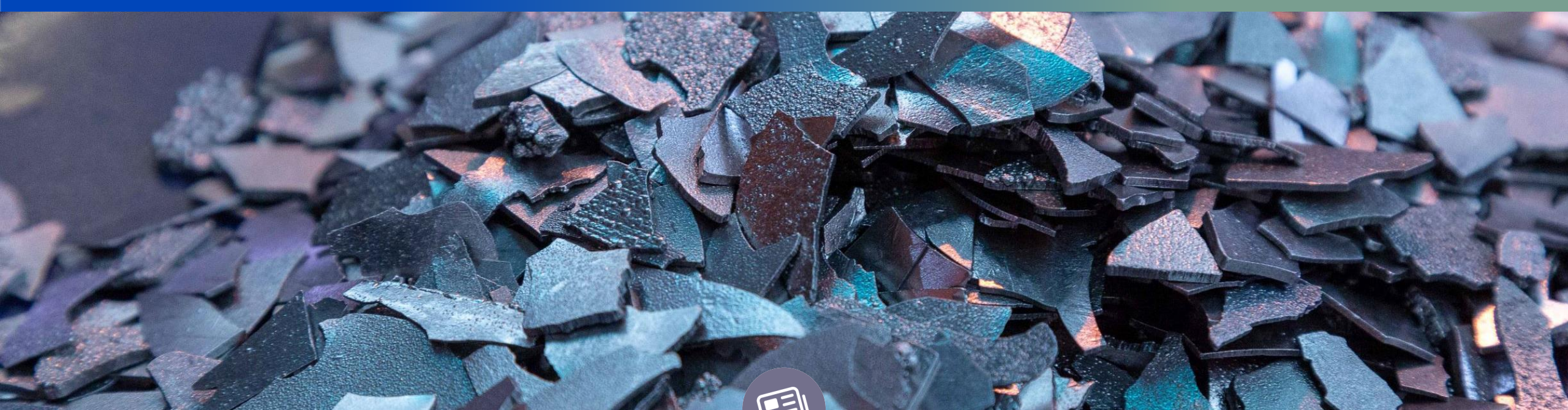


“All substances are poisons;
there is none that is not a poison.
The right dose differentiates
a poison and a remedy.”
- Paracelsus (1493–1541)

How Much Is Too Much?



Essential metals have a 'safe'
range that is essential for survival.



A holistic approach is needed for
chemicals management

The Importance Of Global Context

A disproportionately low value will have huge impacts on the manufacture, use and recycling of cobalt

OEL (Gestis)	µg/m ³ *
Recommendation	1
Denmark	10
Belgium	20
Canada - Ontario	20
Canada - Québec	20
Finland	20
Hungary	20
Ireland	20
Israel	20
New Zealand	20
Norway	20
Poland	20
Singapore	20

*inhalable or total fraction

OEL (Gestis)	µg/m ³ *
South Korea	20
Spain	20
Sweden	20
Germany	20
The Netherlands	20
Australia	50
People's Republic of China	50
Romania	50
Switzerland	50
Austria	100
USA	100
United Kingdom	100
Latvia	500

Disproportionate values can drive substitution and industry closures, and make it impossible to meet economic or environmental ambitions

Science and socioeconomic data support a value of 20 (the most common value in the world) in a risk-based approach.

Cobalt Is A Priority

Cobalt is a **Critical Raw Material (CRM)**

The demand for critical raw materials will dramatically rise over the next several years and decades.



Cobalt is a **Strategic Raw Material (SRM)**

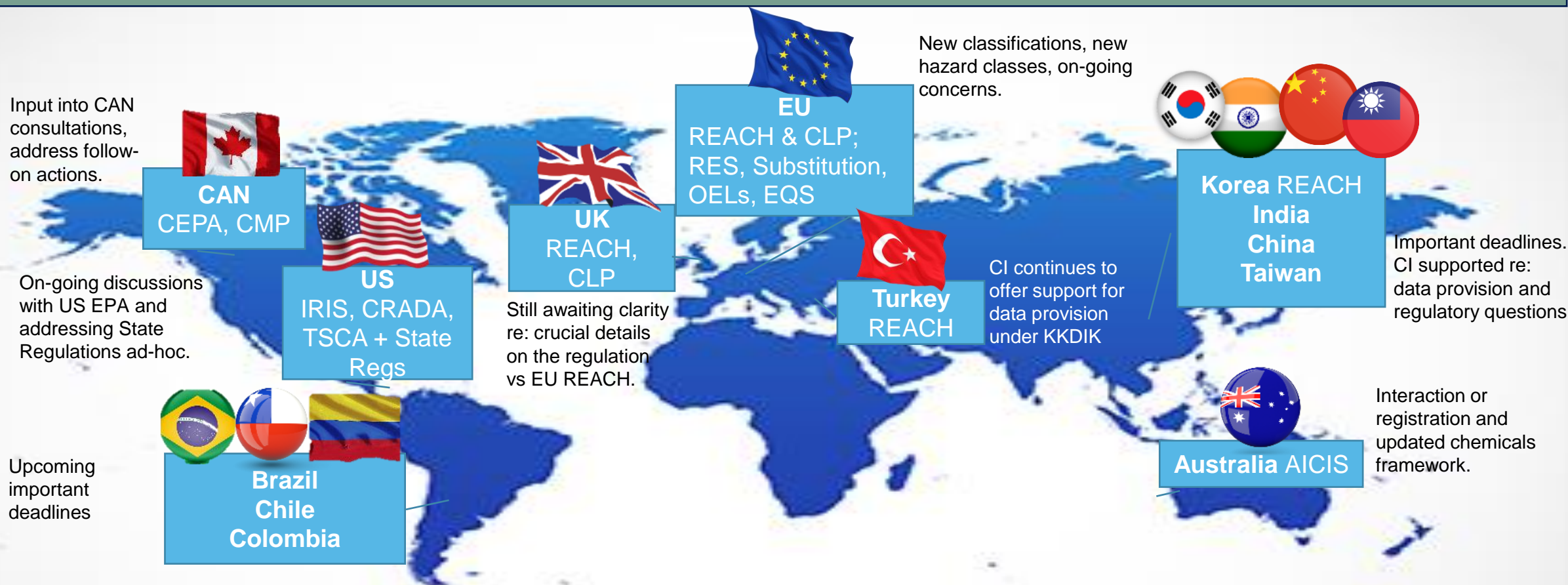
Aerospace and defence sectors need strategic raw materials.

Cobalt is a key mineral for **decarbonisation and energy transition**

Can have a positive impact on reaching environmental goals e.g. climate neutrality, circular economy, renewables, mobility of the future.

The Global Chemicals Management Of Cobalt Is Still Evolving

Global: Transport, Waste, Recycling, GHS Classifications,



Example: EU Battery Regulation

Restriction of substance and/or other risk management of substances used in batteries. Some cobalt substances are 'substances of very high concern' based on inherent hazard. However, appropriate risk management measures are in place to ensure safe handling and use.

The Right Chemicals Management Measures Are Needed To Enable Cobalt's Production And Use Globally



Chemicals management needs to be pragmatic, to **protect people and the environment** and **enable industry** to operate.



Cobalt can contribute to a **greener, more circular and sustainable world**.



Cobalt is a **CRM** and **SRM** and enables countries to reach their **political objectives**.



Cobalt Institute holds the global knowledge centre on cobalt science and technical expertise.



Thank you!

For more information about the chemicals management of cobalt and cobalt compounds, please contact:

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