温馨提示：以下内容均为外文报告原文，请外语不好的同学谨慎打开。

消费电子，智能硬件，工业，农业，自动化，机器人，服务，教育……

INDUSTRIES & MARKETS

Strategic minerals worldwide

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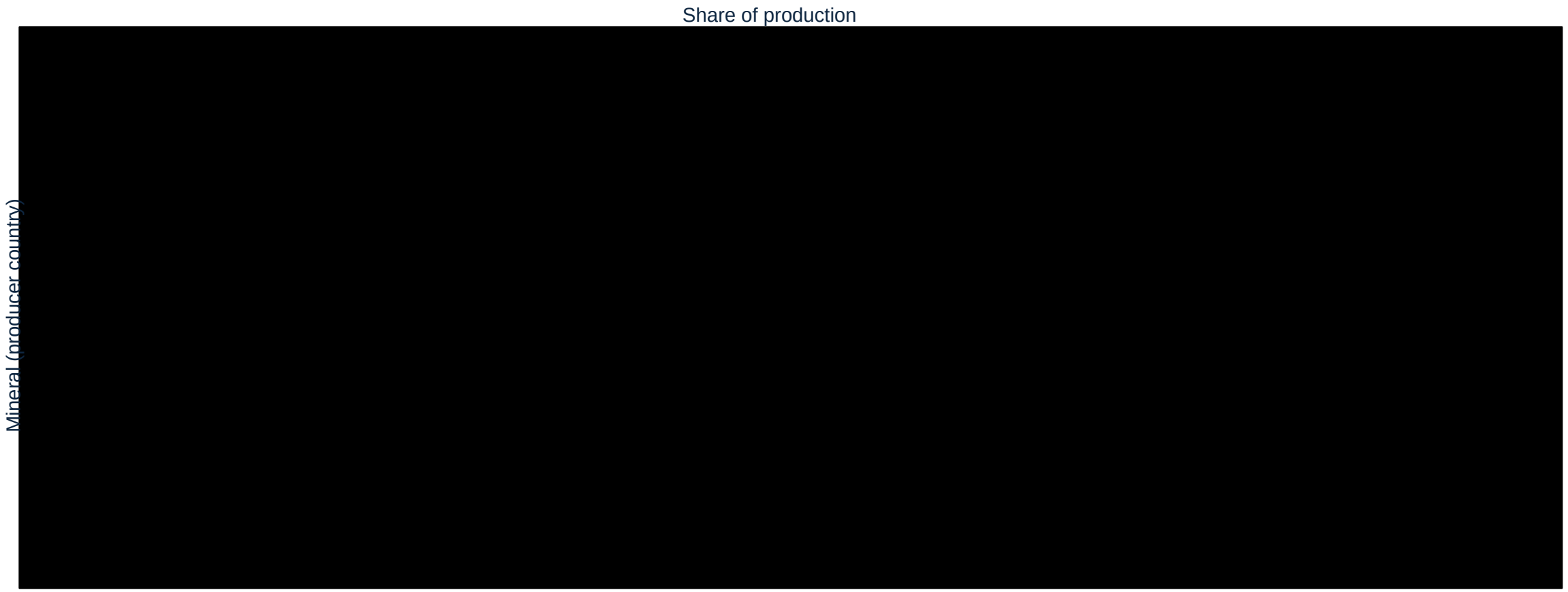
CHAPTER 01

Overview

Production share of critical minerals worldwide as of 2023, by majority producing country

Global critical minerals production share 2023, by majority producing country



3 **Description:** Critical minerals can be defined as minerals that are essential to the economy, and their supply is generally limited. China is the largest producer of many of the world's critical minerals. For example, China produced a 98.18 percent share of the world's gallium, 88 percent of the world's magnesium, and 80.8 percent of tungsten in 2023. Read more

Note(s): 2023; Based on the USGS list of critical minerals updated in February 2022

Source(s): US Geological Survey

Critical mineral mine production volume worldwide in 2022, by leading corporate owner country (in million metric tons)

Global critical mineral mine production volume 2022, by leading owner country

Production in million metric tons

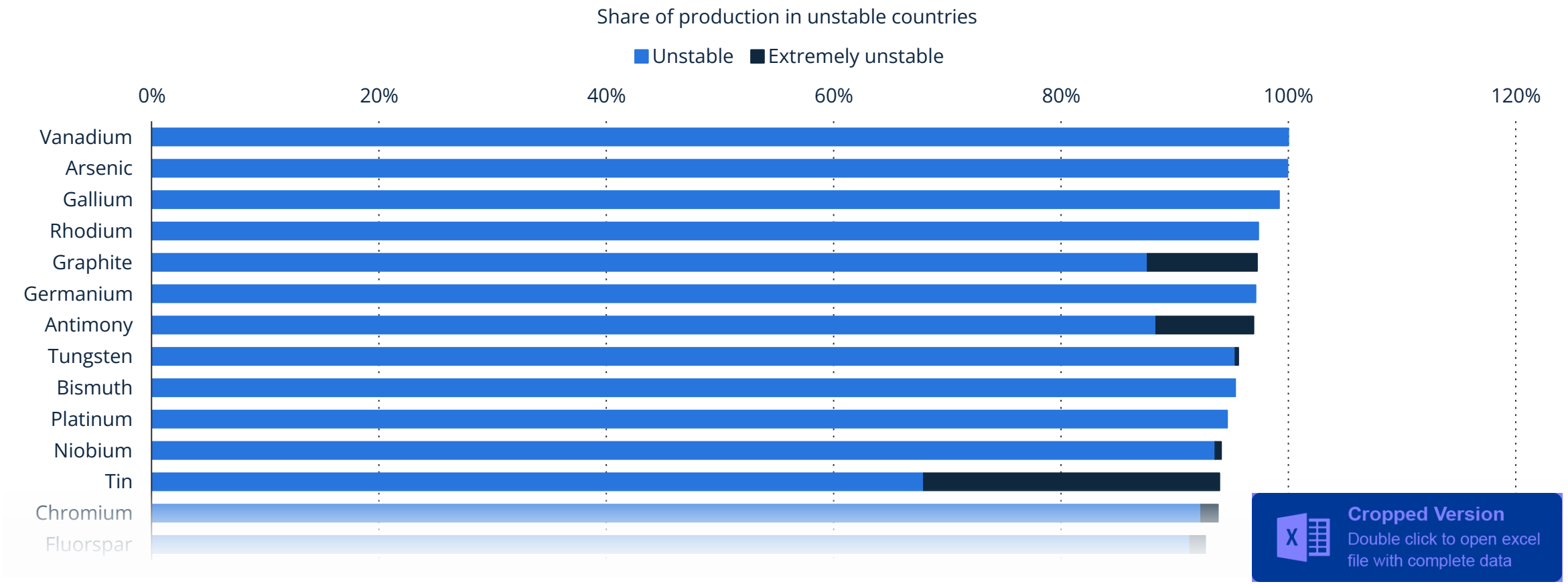
4 **Description:** A total of nearly 508 million metric tons of critical minerals were produced in overseas mines that had corporate owners based in Canada as of 2022. This made Canada the world's leading headquarters country for critical mineral producing mines that were operating overseas at that time. Chile, on the other hand, had the largest critical mineral production from domestically-owned mines at that time, producing 330.46 million tons of critical minerals that year. Read more

Note(s): Worldwide; 2022; domicile country of primary-equity owners of operational mines that incude copper, cobalt, lithium, manganese, and/or nickel as a primary commodity; *Data for domestic mines in China was not available, so China is not [...] Read more

Source(s): Energy Monitor; GlobalData

Share of critical minerals produced in politically unstable countries worldwide in 2022, by mineral

Global share of critical mineral production in politically unstable countries 2022



Cropped Version
Double click to open excel file with complete data

Description: Significant shares of critical minerals are sourced from politically unstable countries. For example, more than 79 percent of aluminum, a resource widely used in construction and manufacturing, is produced in countries classified as politically unstable or extremely unstable.Critical minerals are minerals which have been deemed essential for modern technologies, economies, or national security. Read more
Note(s): Worldwide; 2022; 28 of the 50 minerals listed in the United States' 2022 final list of critical minerals
Source(s): BMLRT (Österreich);

acquisition deals worldwide from 2019 to 2021 (in billion U.S. dollars)

M&A deal value of critical minerals from leading global mining companies 2019-2021

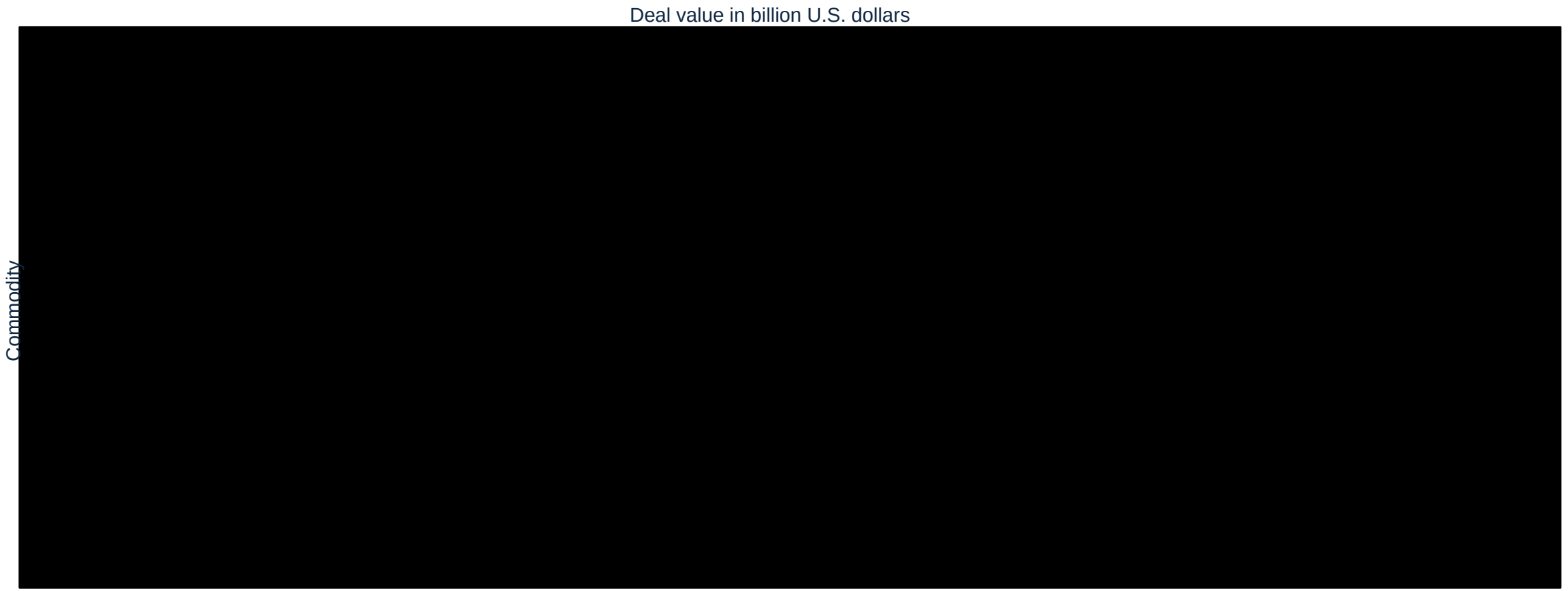
6 **Description:** As of 2021, the total global value of merger and acquisition (M&A) deals among the global leading 40 mining companies dealing with critical minerals amounted to 13.2 billion U.S. dollars. Read more

Note(s): Worldwide; 2019 to 2021; top 40 mining companies

Source(s): PwC; S&P Global Market Intelligence

Merger and acquisition deal value of selected critical minerals worldwide in 2021, by target commodity (in billion U.S. dollars)

Global critical minerals M&A deal value worldwide 2021, by target commodity



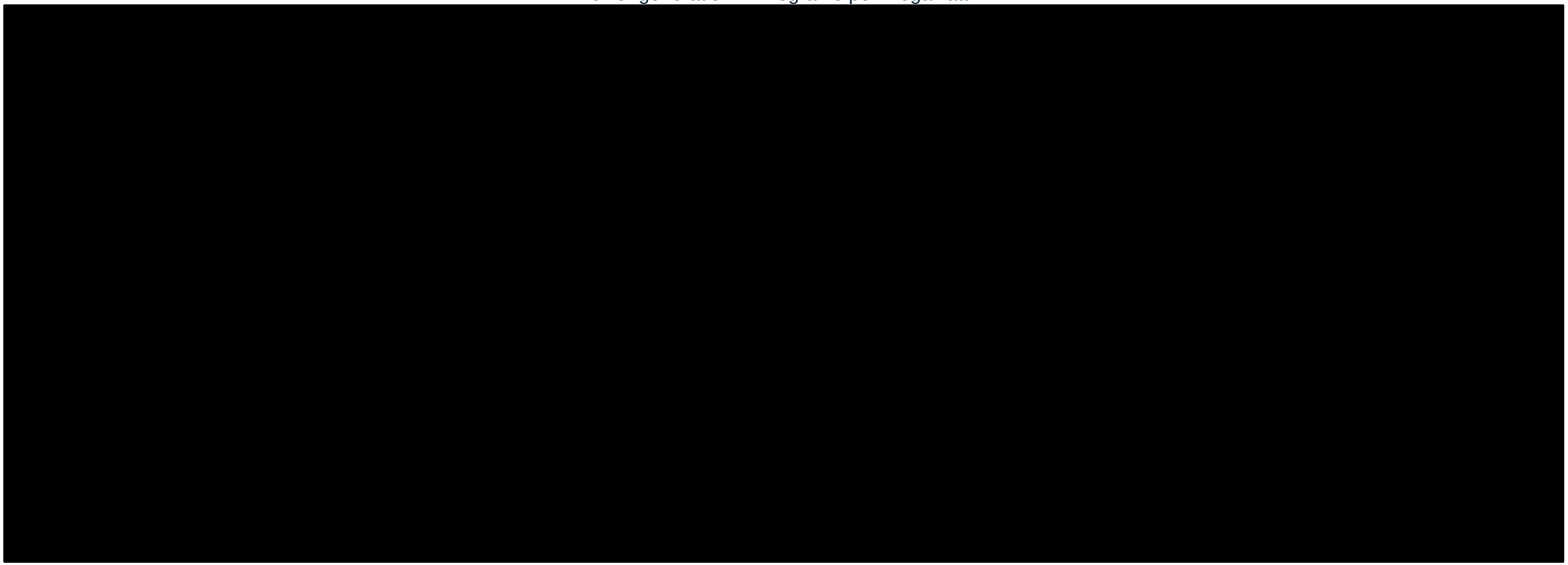
7 **Description:** The total value of global merger and acquisition (M&A) deals targeting copper resources in 2021 amounted to 6.1 billion U.S. dollars. Of that amount, nearly one-third was attributable to the acquisition of the Spanishcopper mining company Minas de
! " " # $ % ! Read more $ $ $

Note(s): Worldwide; 2021
Source(s): PwC; S&P Global Market Intelligence

Volume of critical minerals contained in selected energy technologies worldwide as of 2021, by type (in kilograms per megawatt of power generated)

Global volume of critical minerals in energy technologies 2021, by type

Power generation in kilograms per megawatt



8 **Description:** The requirement for critical minerals in renewable energy infrastructure is notably higher than for fossil fuel and nuclear energy infrastructure. Offshore wind energy structures, for example, require the equivalent of some 15,409 kilograms of critical minerals per megawatt of power generated, while natural gas infrastructure requires just 1,166 kilograms of critical minerals per megawatt generated. Read more

Note(s): Worldwide; 2021

Source(s): IEA; PwC

End of life recycling rate of selected critical minerals worldwide, by energy technology (in percent)

End of life recycling rate of critical minerals globally, by energy technology

Description: The end-of-life recycling rate for cobalt in electric vehicle (EV) batteries and battery storage systems is approximately 90 percent. Similarly, the silicon used in solar photovoltaic energy and the rare earths utilized for wind turbine permanent magnets have a recycling rate of about 90 percent. Read more.
Note(s): Worldwide; 2022
Source(s): Eurometaux; IEA; Katholieke Universiteit Leuven; McKinsey & Company

CHAPTER 02

Reserves

Reserves of cobalt worldwide from 2010 to 2023 (in million metric tons)

Global cobalt reserves 2010-2023

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Description: The total reserves of cobalt across the globe amounted to an estimated 11 million metric tons in 2023. Although cobalt is not especially rare, ranking 32nd in global abundance among metals, it has become an increasingly important commodity due to its use in batteries, as well as in alloys, chemicals and ceramics, cemented carbides, and more. Read more

Note(s): Worldwide; 2010 to 2023

Source(s): US Geological Survey

Leading countries based on reserves of cobalt worldwide in 2023 (in metric tons)

Global cobalt reserves 2023, by country

Cobalt reserves in metric tons

Description: The Democratic Republic of the Congo has the largest cobalt reserves in the world, at some six million metric tons as of 2023. With the world's total cobalt reserves amounting to 11 million metric tons that year, the DR Congo accounted for more than half of the worldwide reserves of the metal. This was followed by Australia, which held an impressive 1.7 million metric tons of the global cobalt reserves in 2023. Read more.
Note(s): Worldwide; 2023; Estimates
Source(s): US Geological Survey

Reserves of lithium worldwide from 2010 to 2023 (in million metric tons)

Global lithium reserves 2010-2023

Description: In 2023, the total estimated reserves of lithium worldwide amounted to 28 million metric tons. This was the highest figure on record, up from some 13 million metric tons in 2010. The country with the largest reserves of lithium globally is Chile. Read more

Note(s): Worldwide; 2010 to 2023

Source(s): US Geological Survey

Reserves of lithium worldwide as of 2023, by country (in 1,000 metric tons)

World lithium reserves 2023, by country

Reserves in thousand metric tons

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Description: In 2023, reserves of lithium in Chile amounted to an estimated 9.3 million metric tons, the largest worldwide. That same year, Australia held a total lithium reserves of some 6.2 million metric tons. Read more

Note(s): Worldwide; 2023

Source(s): US Geological Survey

Distribution of lithium reserves worldwide in 2023, by country

Share of global lithium reserves 2023, by country

Share of reserves

Description: Chile has the largest reserves of lithium worldwide, accounting for over one-third of the total reserves as of 2023. This was followed by Australia, with a 22.4 percent share of global lithium reserves that year. Meanwhile, the United States accounted only for about four percent of the world's reserves of lithium. Read more

Note(s): Worldwide; 2023

Source(s): US Geological Survey

Reserves of tantalum worldwide from 2010 to 2023 (in 1,000 metric tons)

Global tantalum reserves 2010-2023

Description: In 2023, the world's total reserves of tantalum amounted to an estimated 390,000 metric tons, which is the sum of the reserves in China, Australia, and Brazil – the only countries for which data was available. Read more

Note(s): Worldwide; 2010 to 2023; * Figure for 2021 represents the sum of the stated reserve values for Australia and Brazil, while figures for 2022 and 2023 are the sum of the stated reserve values provided for Australia, Brazil, and China. This is [...] Read more

Source(s): US Geological Survey

Leading countries based on reserves of tantalum worldwide in 2023 (in metric tons)

Global tantalum reserves 2023, by country

Description: In 2023, China's tantalum reserves amounted to roughly 240,000 metric tons. Previously known as tantalium, tantalum is a rare transition metal that is hard, blue-gray in color, and lustrous. It is highly resistant to corrosion, which makes it invaluable for high-temperature applications such as in electrical devices and aircraft engines, as well as with handing corrosive chemicals. Read more

Note(s): Worldwide; 2023

Source(s): US Geological Survey

Reserves of tungsten worldwide from 2010 to 2023 (in 1,000 metric tons)

Global tungsten reserves 2010-2023

Description: The world's total tungsten reserves amounted to 4.4 million metric tons in 2023. This represented an increase of roughly 16 percent from the previous year and the highest figure recorded during the period in consideration. Read more

Note(s): Worldwide; 2010 to 2023

Source(s): US Geological Survey

Leading countries based on reserves of tungsten worldwide in 2023 (in metric tons)

Global tungsten reserves 2023, by country

Reserves in metric tons

Description: China has by far the world's largest tungsten reserves, at some 2.3 million metric tons as of 2023. This was followed by Australia and Russia, with reserves amounting to some 570,000 and 400,000 metric tons, respectively. The world's total reserves of tungsten were estimated at 4.4 million metric tons that year. Read more.
Note(s): Worldwide; 2023
Source(s): US Geological Survey