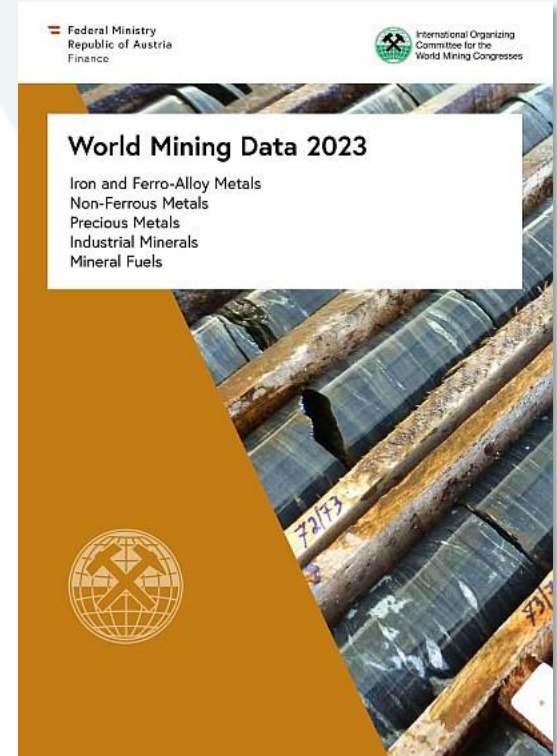




104th IOC Meeting, 25th June 2023
Brisbane, Australia

Report on Mining Statistics

Christian Reichl
Austrian Federal Ministry of Finance
Directorate VI/5 Mineral Resources Policy
Vienna, Austria



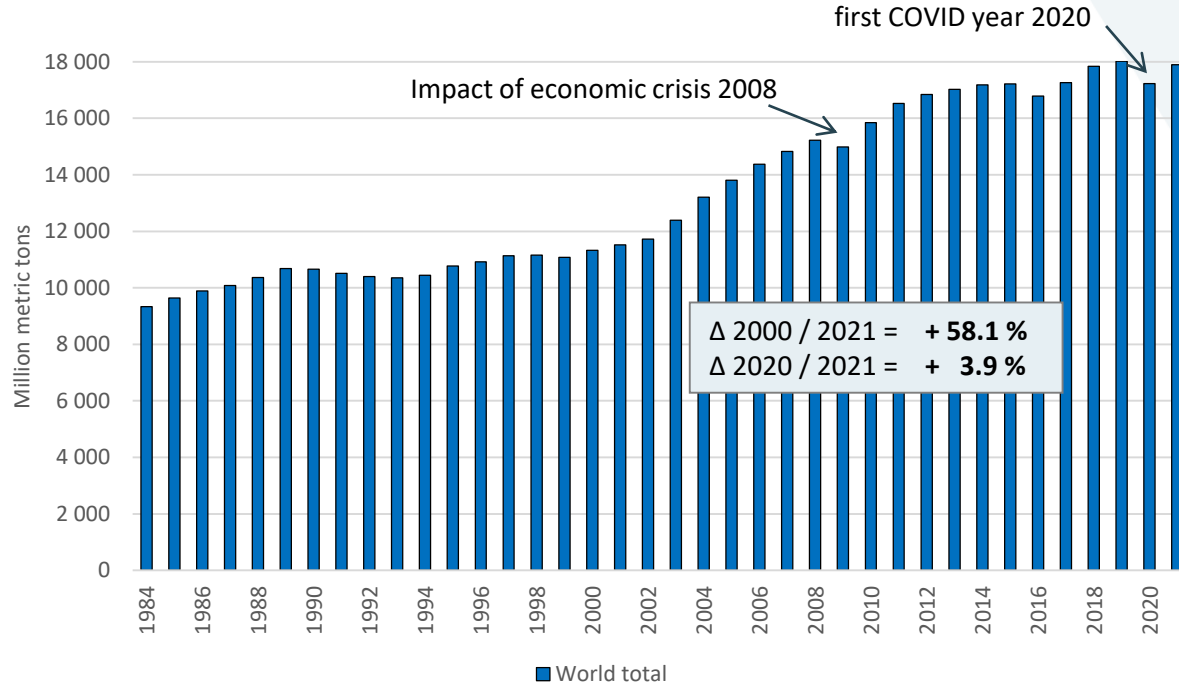


World Mining Data 2023

	Production 2021 in Million metr. t	Share 2021 %	Δ% 2000 / 2021	Δ% 2020 / 2021
Asia	10,804	60.4	+ 113.9	+ 4.9
North America	2,742	15.3	+ 17.9	+ 3.4
Oceania	1,221	6.8	+136.9	- 2.3
Europe	1,212	6.8	- 31.0	+ 3.3
Latin America	984	5.5	+ 8.3	+ 2.8
Africa	934	5.2	+ 21.9	+ 4.7
Total	17,897	100.0	+ 58.1	+ 3.9



World Mining Data 2023



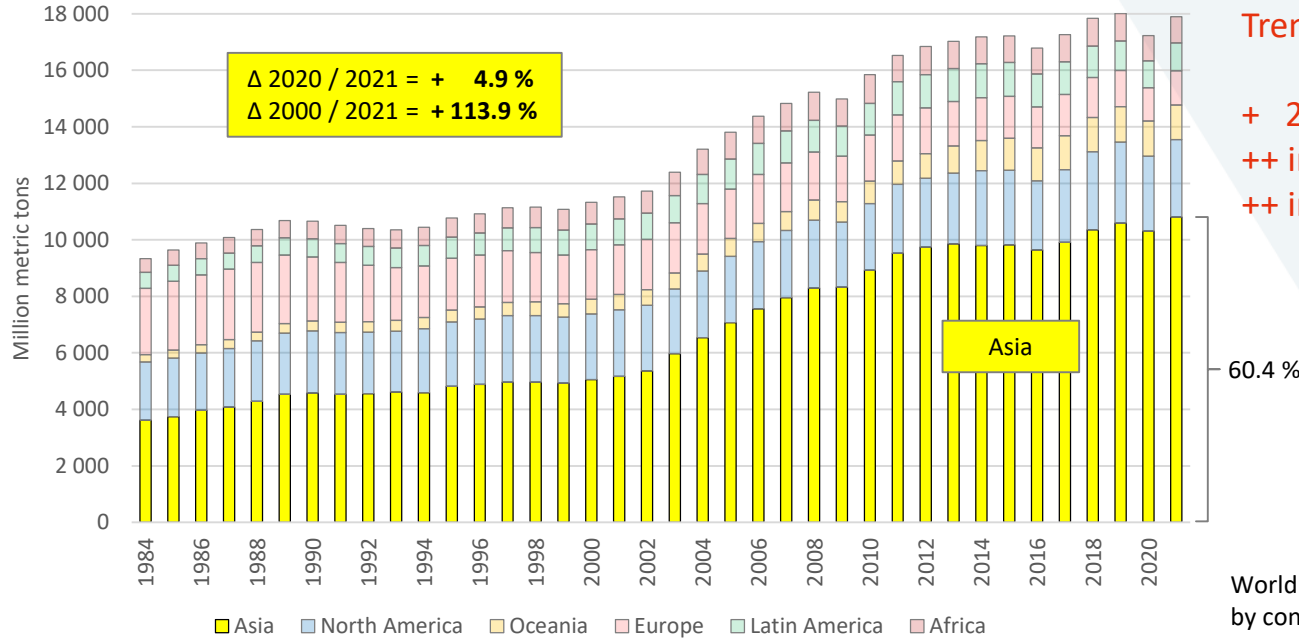
Trend: upwards

2021 17.9 Bln metr. t
2000 11.3 Bln metr. t
1985 9.6 Bln metr. t

World mining production 1984 – 2021
by continents
(without construction minerals, in Million metr. t)



World Mining Data 2023, Asia



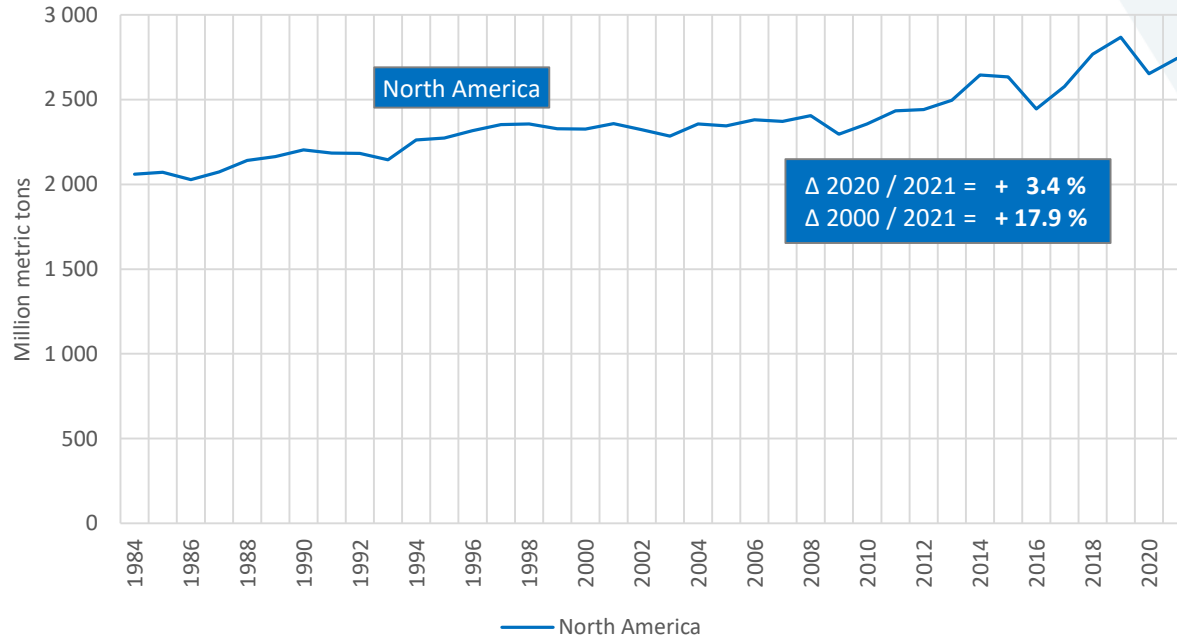
Trend: upwards

+ 2017 - 2021 China Steam Coal
++ in 2021 India Steam Coal
++ in 2021 Russia, China, Iran Gas

World mining production 1984 – 2021
by continents
(without construction minerals, in Million metr. t)



World Mining Data 2023, North America



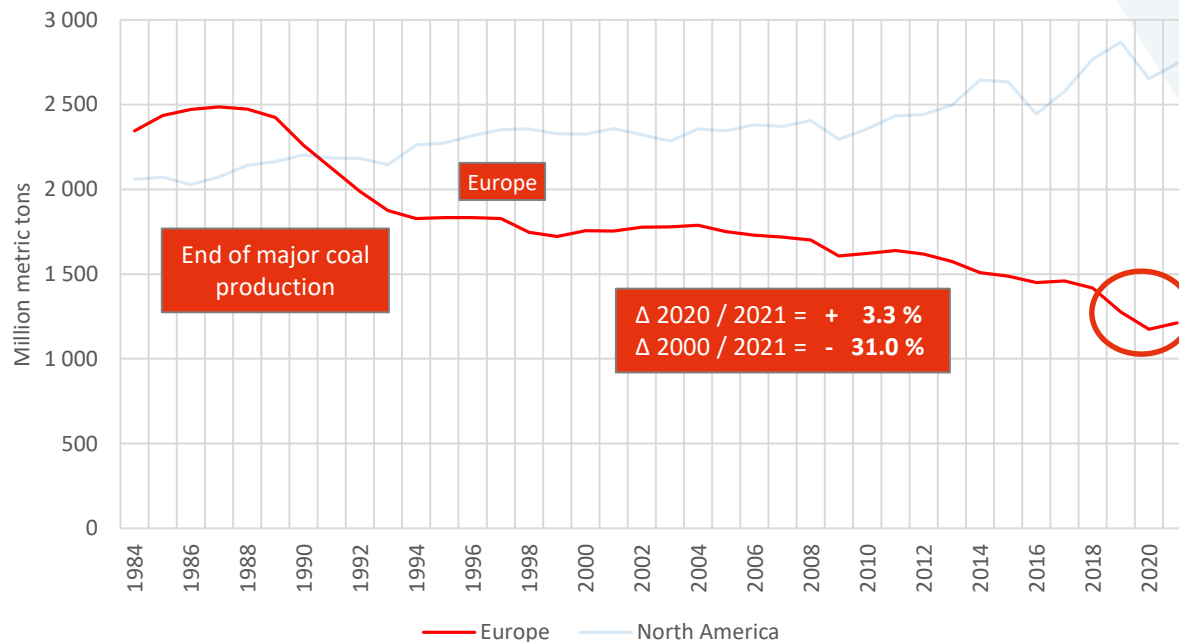
Trend: upwards

- 2016 - 2020 US Coal
- ++ 2017 - 2019 US Oil & Gas
- ++ in 2021 US Coal
- + in 2021 US Natural Gas

World mining production 1984 – 2021
by continents
(without construction minerals, in Million metr. t)



World Mining Data 2023, Europe



Trend: constantly declining
in the past years until 2020

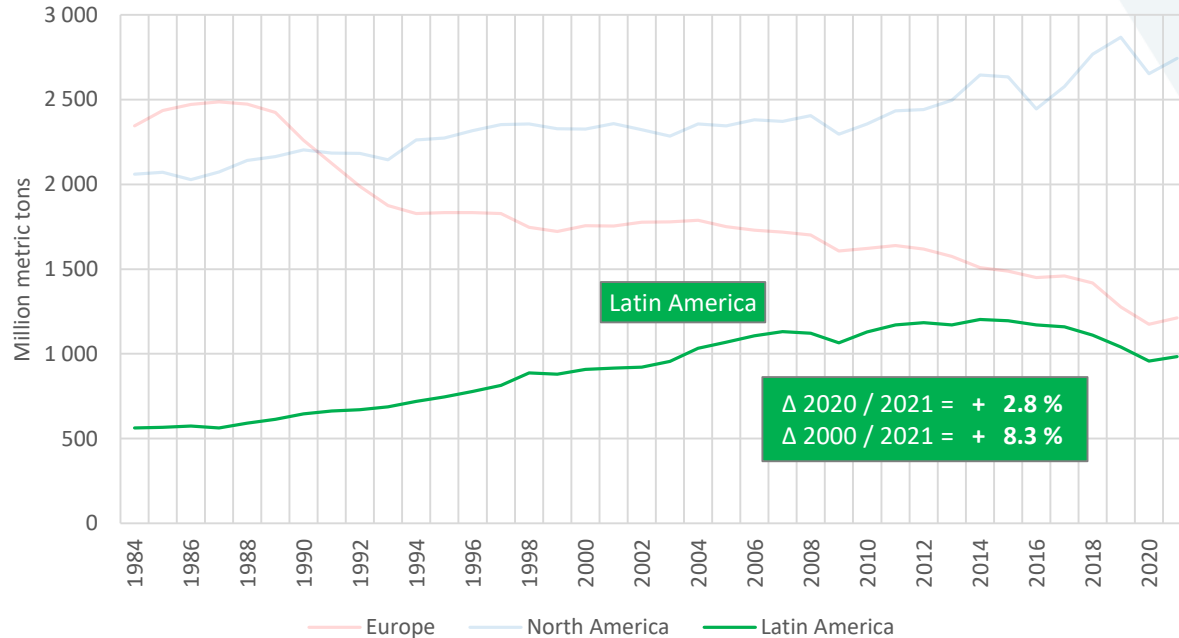
reduced Oil & Gas Production in
the North Sea
(N, UK, NL, DK)
reduced Coal Production
(POL, UK, GER, CZ)

++ in 2021 Ukraine Coal

World mining production 1984 – 2021
by continents
(without construction minerals, in Million metr. t)



World Mining Data 2023, Latin America



Declining Trend seems broken:

Venezuela:

-- 2017 - 2020 Petroleum

Brazil:

++ in 2021 Iron Ore, Coal

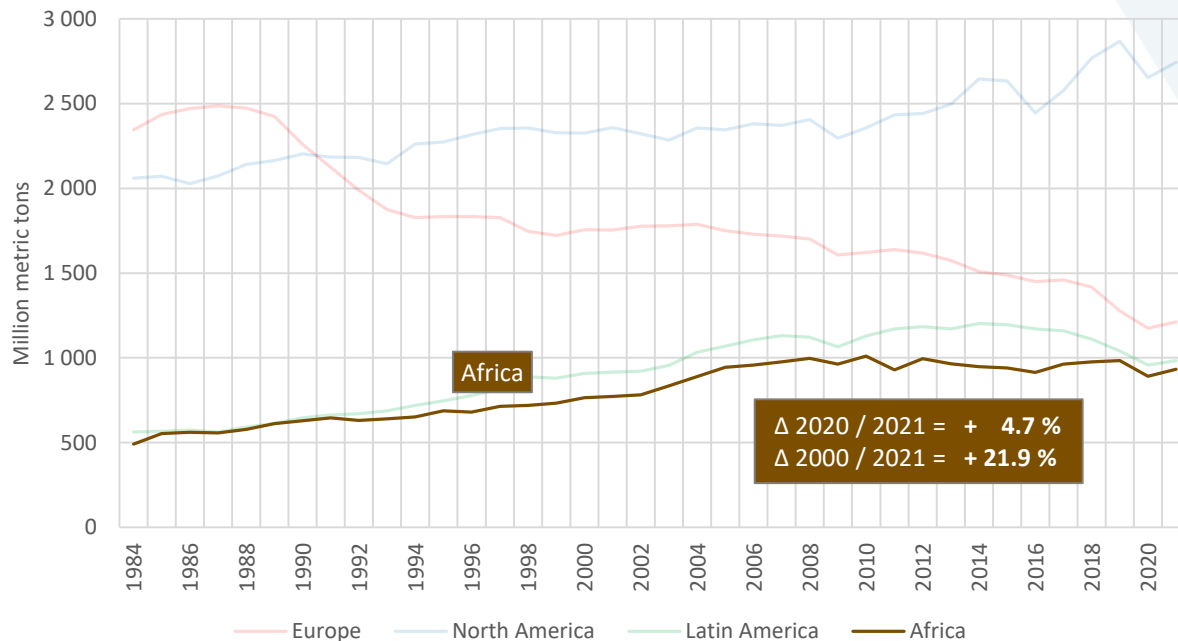
Chile:

++ 2017 – 2021 Lithium

World mining production 1984 – 2021
by continents
(without construction minerals, in Million metr. t)



World Mining Data 2023, Africa



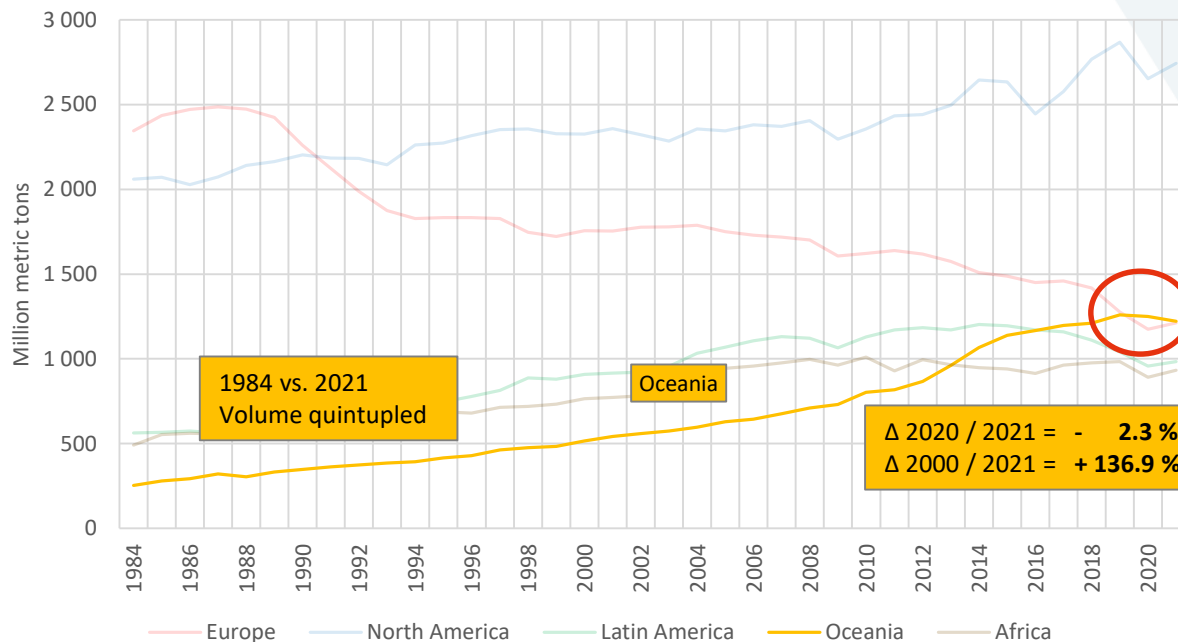
Trend: Ups and downs since 2011 due to Collapse and Restart of Libya's Oil & Gas Production (Civil war!)

++ in 2021 Gas Algeria, Egypt

World mining production 1984 – 2021 by continents (without construction minerals, in Million metr. t)



World Mining Data 2023, Oceania



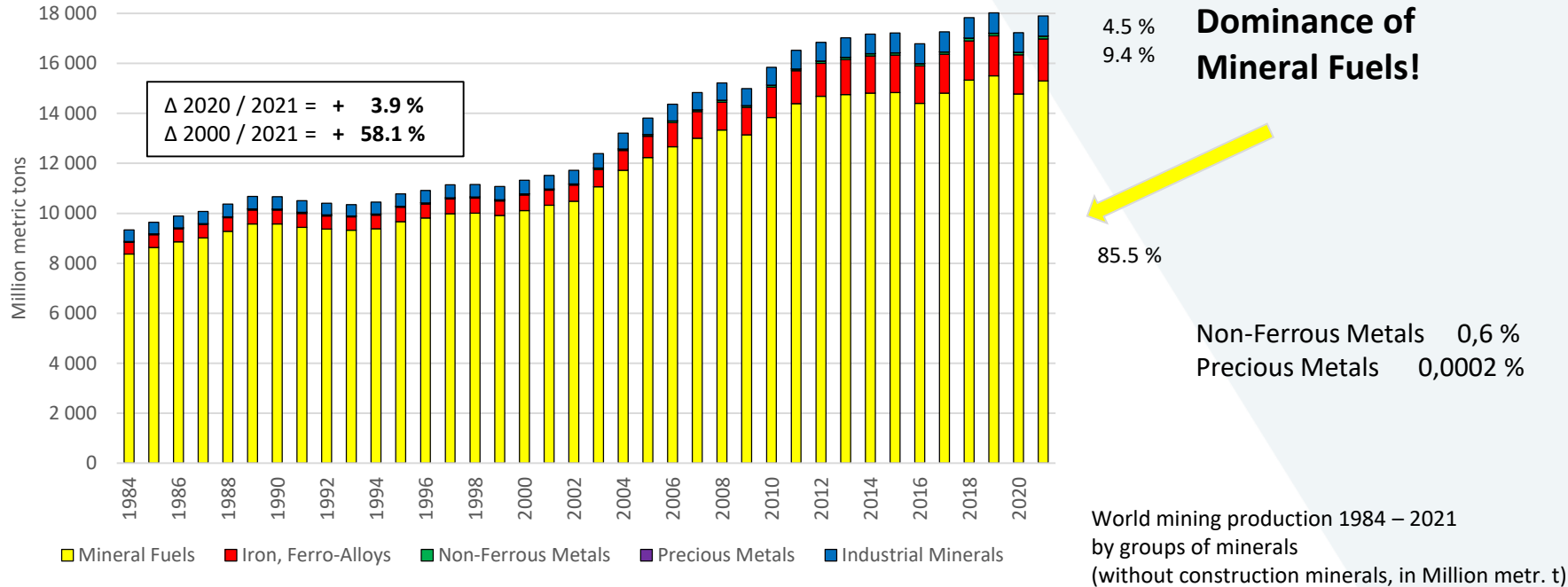
Mining Production:
Oceania (i.e. AUS) reached
Africa in 2013, LAM in 2016
and Europe in 2020.

Australia:
++ in 2021 Lithium, REE
- in 2021 Mn, Ni, TiO₂, Cu
- in 2021 Steam Coal, Oil

World mining production 1984 – 2021
by continents
(without construction minerals, in Million metr. t)

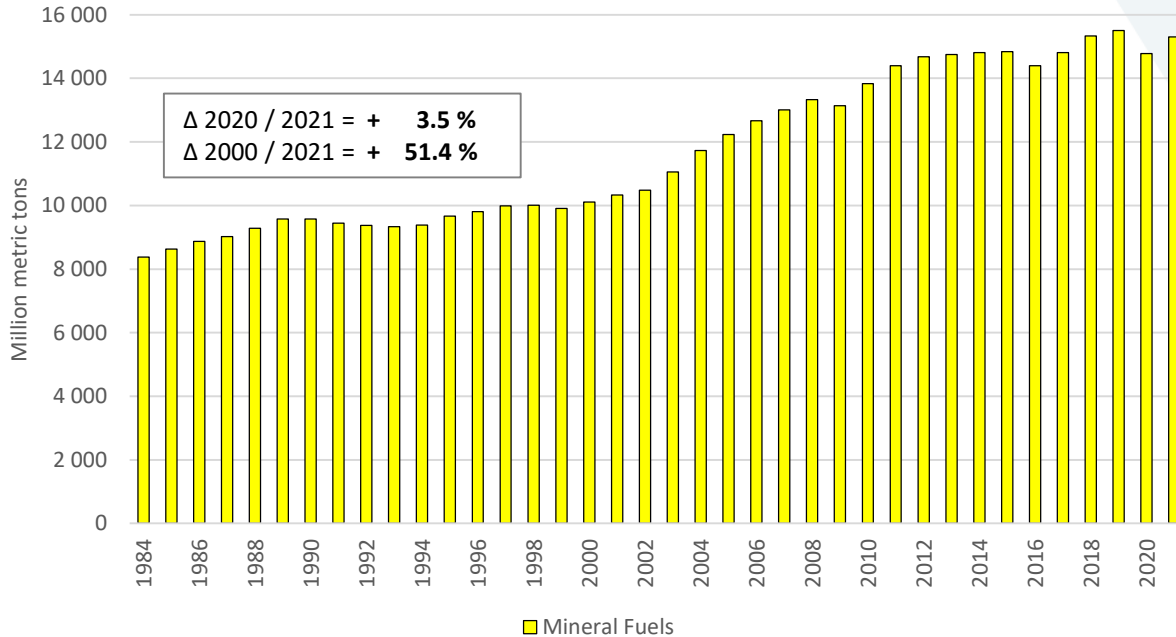


World Mining Data 2023, Groups of Commodities





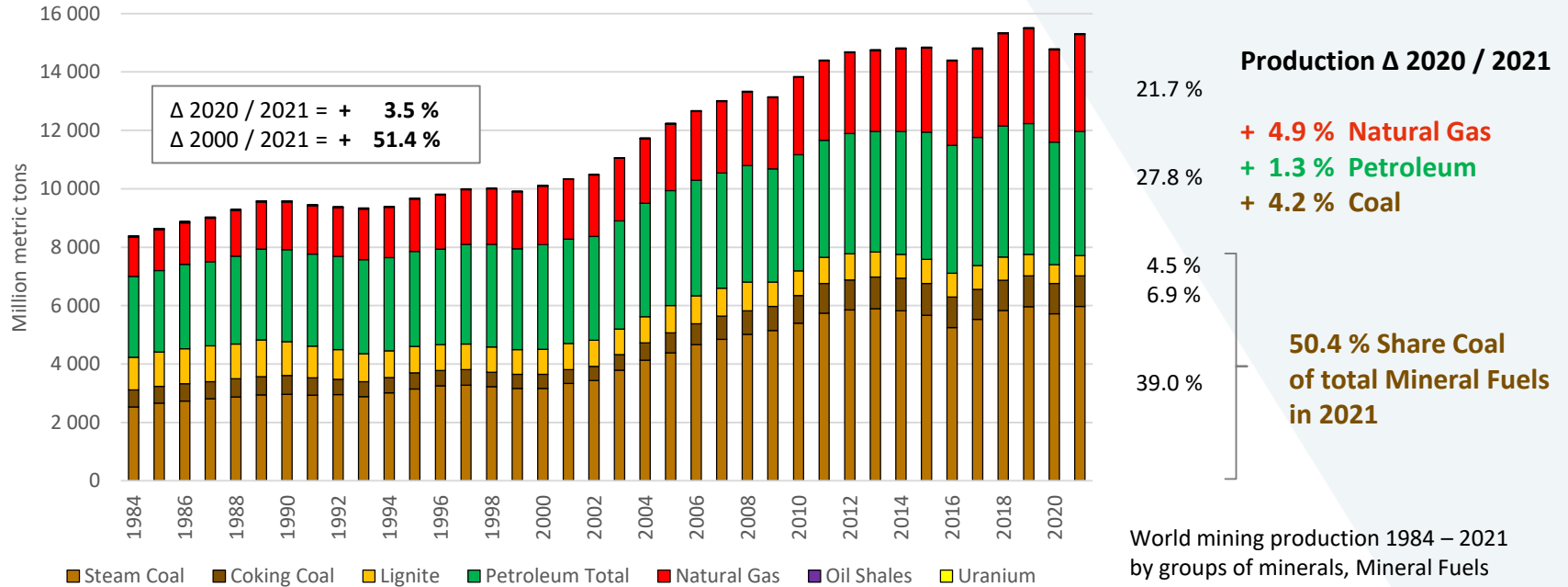
World Mining Data 2023, Mineral Fuels



World mining production 1984 – 2021
by groups of minerals, Mineral Fuels
(in Million metr. t)

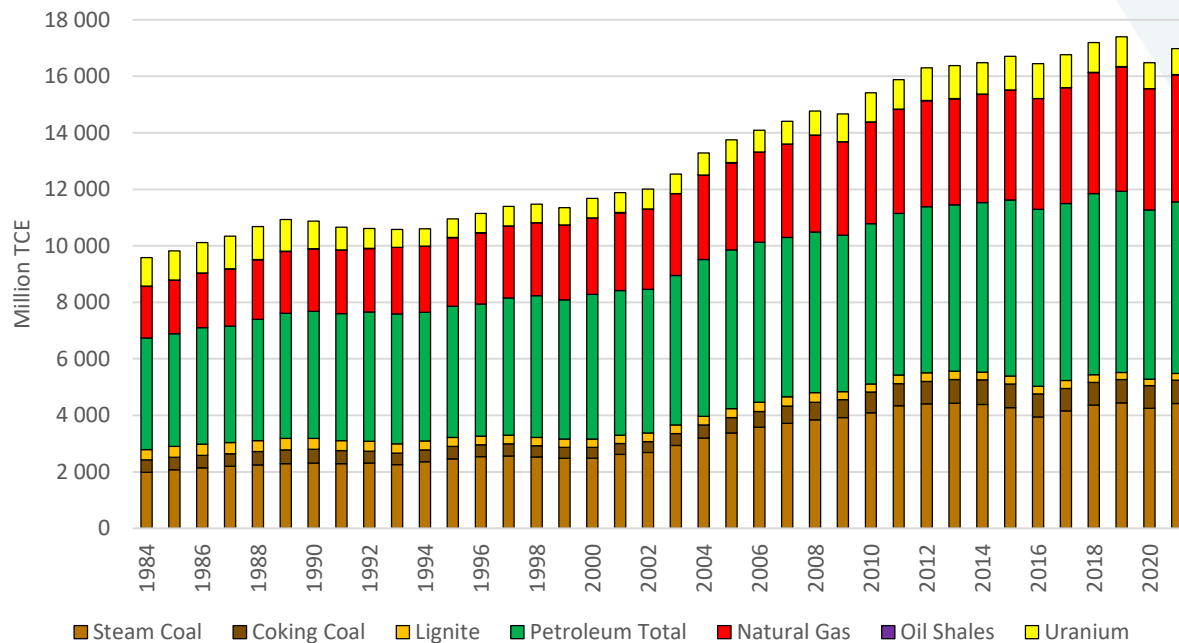


World Mining Data 2023, Mineral Fuels





World Mining Data 2023, Mineral Fuels in TCE



in 2021:

16.98 Billion TCE

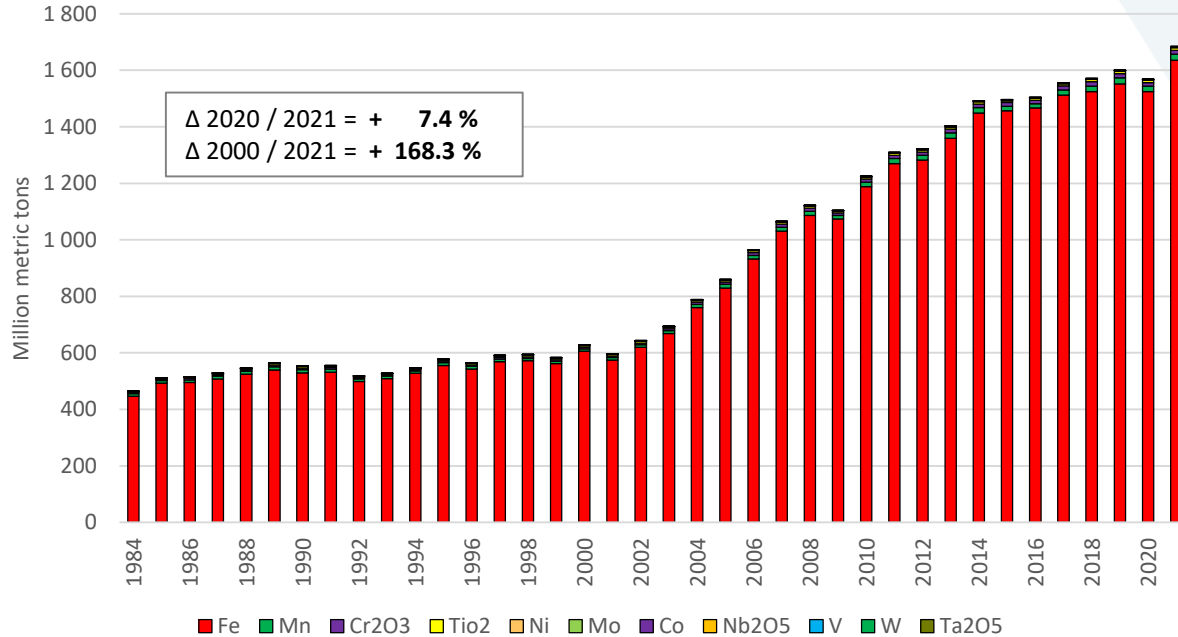
≈ 497,636 PJ (Petajoule)

≈ 498 EJ (Exajoule, 10¹⁸ J)

World mining production 1984 – 2021
by groups of minerals, Mineral Fuels
(in Million TCE)



World Mining Data 2023, Iron & Ferro-Alloy Metals

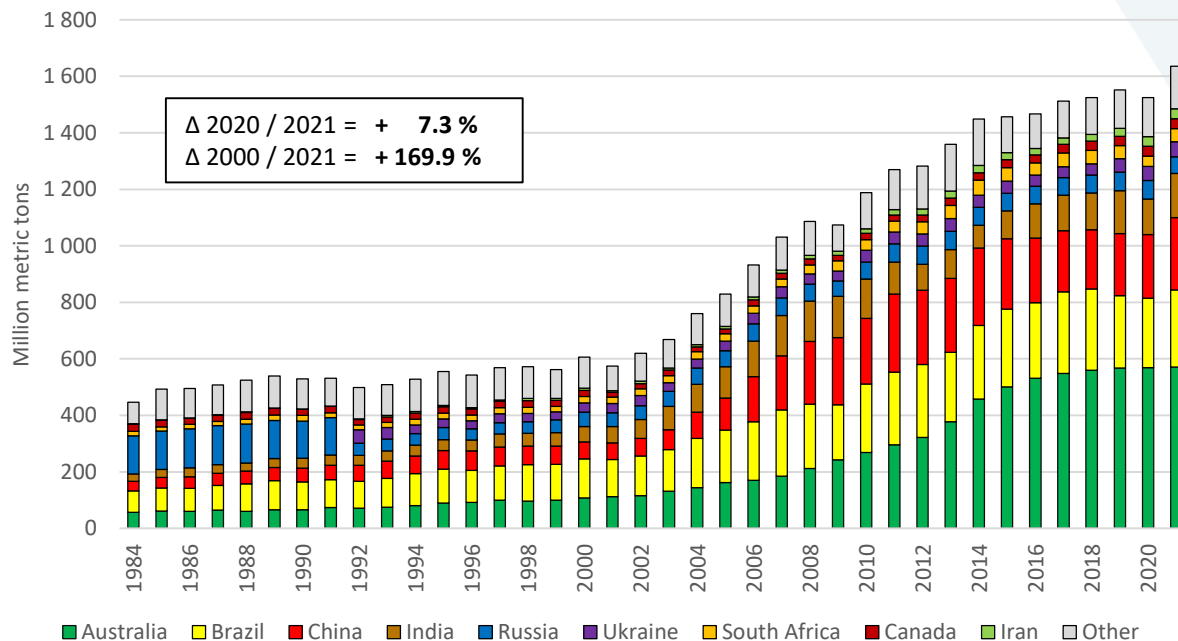


Ratio of Iron Ore to
all other Ferro Alloys
is 97.2 % to 2.8 %.

World mining production 1984 – 2021
by groups of minerals (in Million metr. t)



World Mining Data 2023, Iron Ore (Fe-Content)



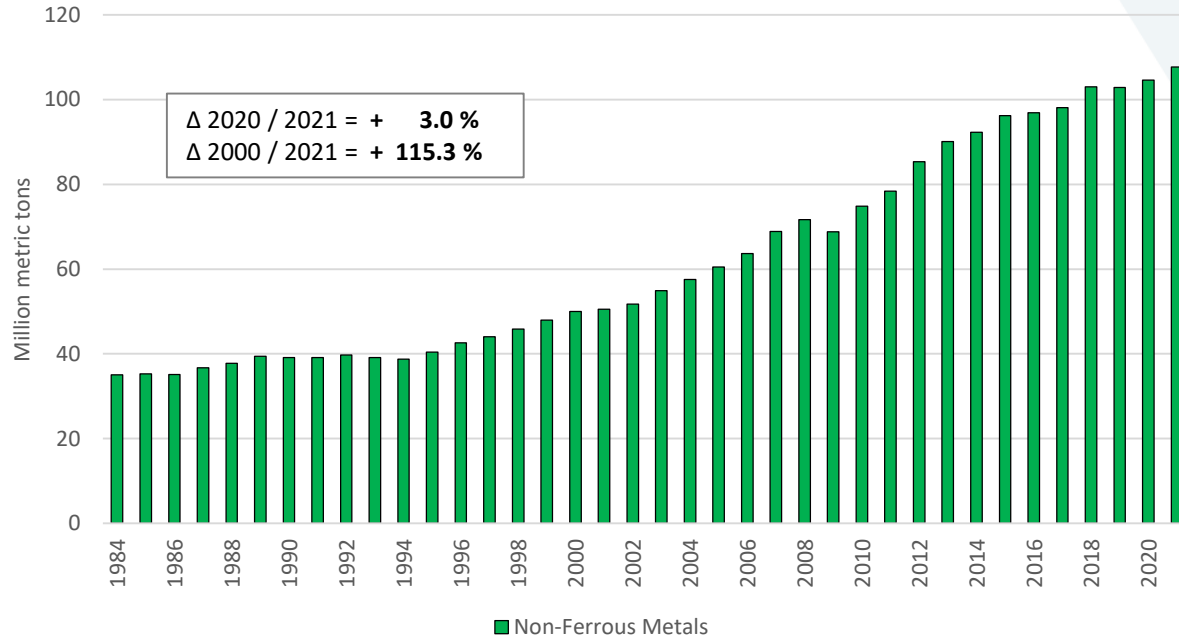
Key Mineral Iron Ore!
 4 Countries > 75 %

9.6 %
 15.6 %
 16.7 %
 34.9 %

World mining production 1984 – 2021
 by groups of minerals, Iron
 (in Million metr. t)



World Mining Data 2023, Non-Ferrous Metals



„linear“ upward trend
since 1994!

Production Δ 2020 / 2021

++ Te, Ge, Ga, Li, REE, Bi

+ Al, Re, Se

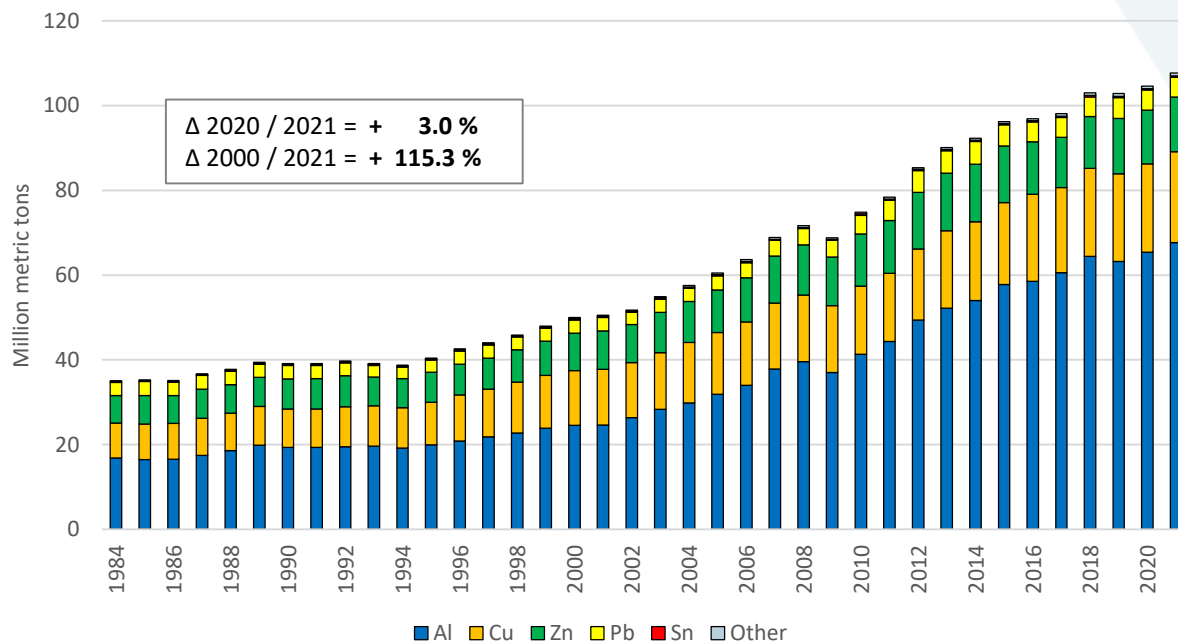
-- Antimony (-21.3 %)

-- Mercury (-27.6%)

World mining production 1984 – 2021
by groups of minerals, Non-Ferrous Metals
(in Million metr. t)



World Mining Data 2023, Non-Ferrous Metals



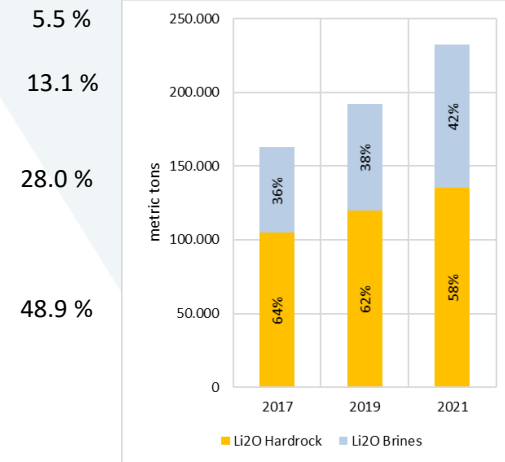
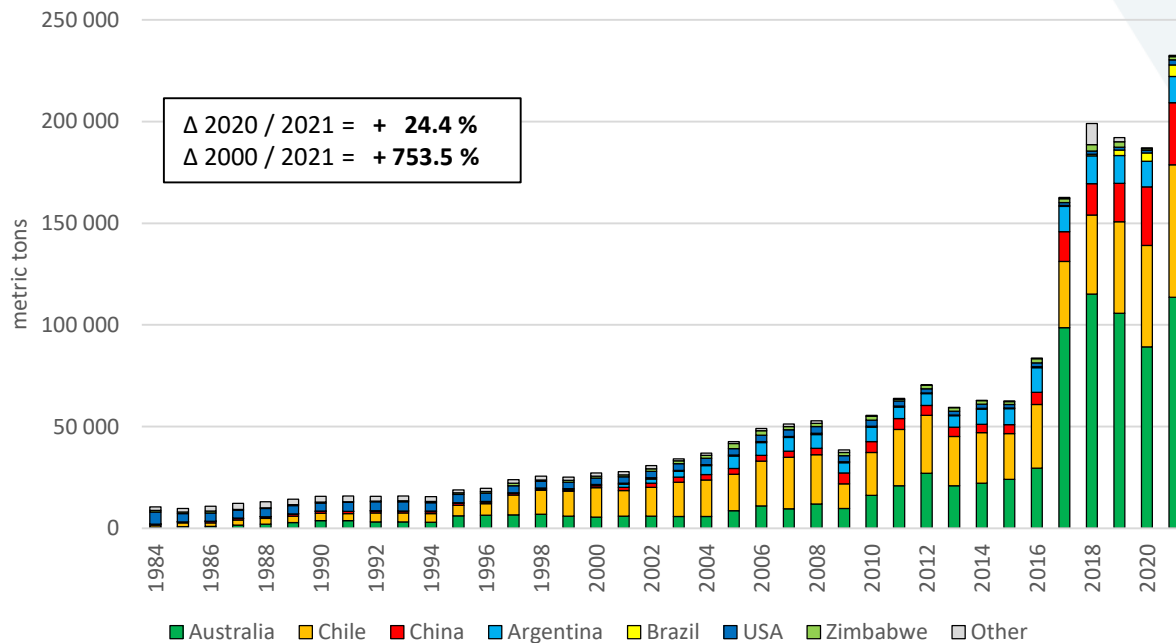
0,6%
 Ga, Ge, In, REE, Li, ...

5 Metals
 ≈ 99.4 %

World mining production 1984 – 2021
 by groups of minerals, Non-Ferrous Metals
 (in Million metr. t)



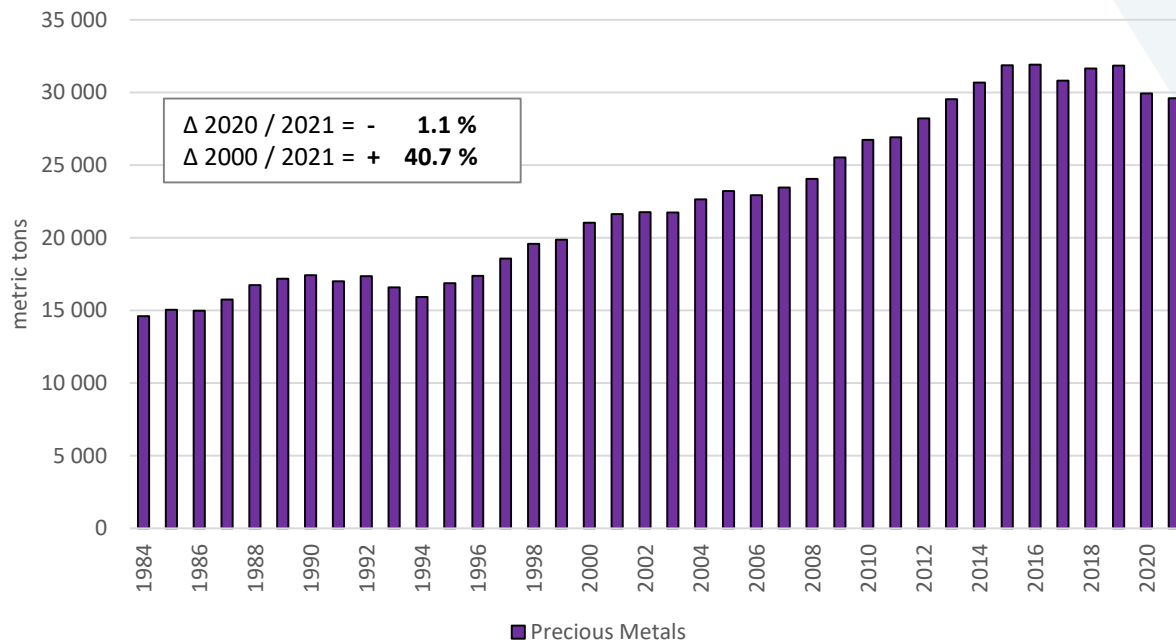
World Mining Data 2023, Lithium (Li₂O-Content)



World mining production 1984 – 2021
by groups of minerals, Non-Ferrous Metals
(in metr. t)



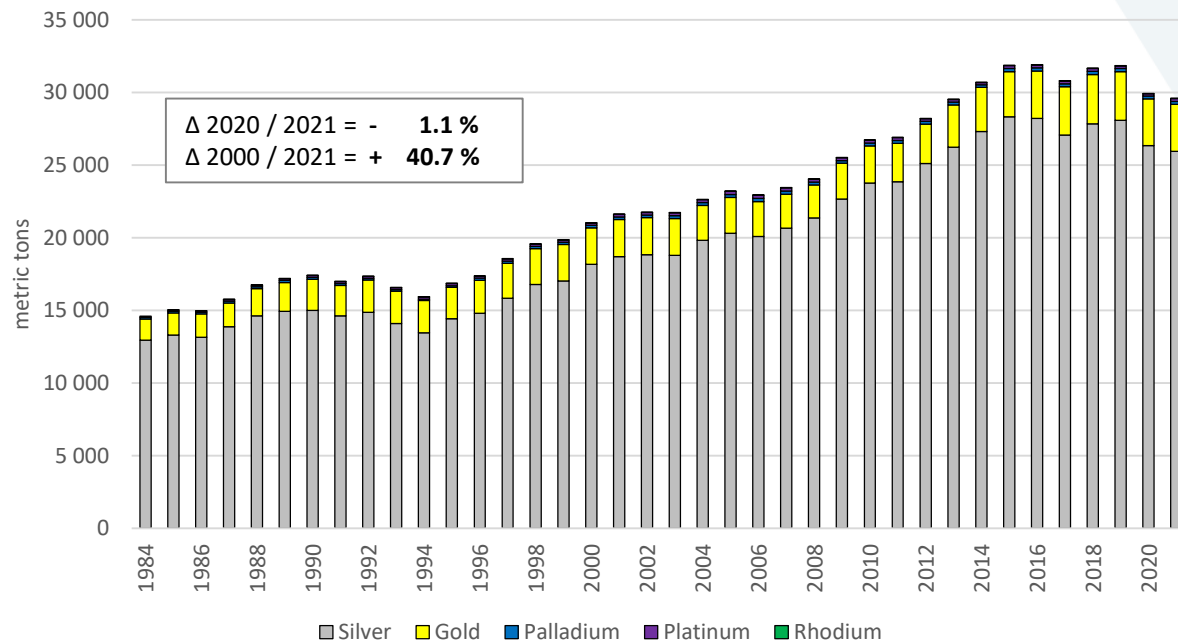
World Mining Data 2023, Precious Metals



World mining production 1984 – 2021
by groups of minerals, Precious Metals
(in metr. t)



World Mining Data 2023, Precious Metals



Production in 2021

10.9 %

3 235 tons of primary Au
25 939 tons of primary Ag

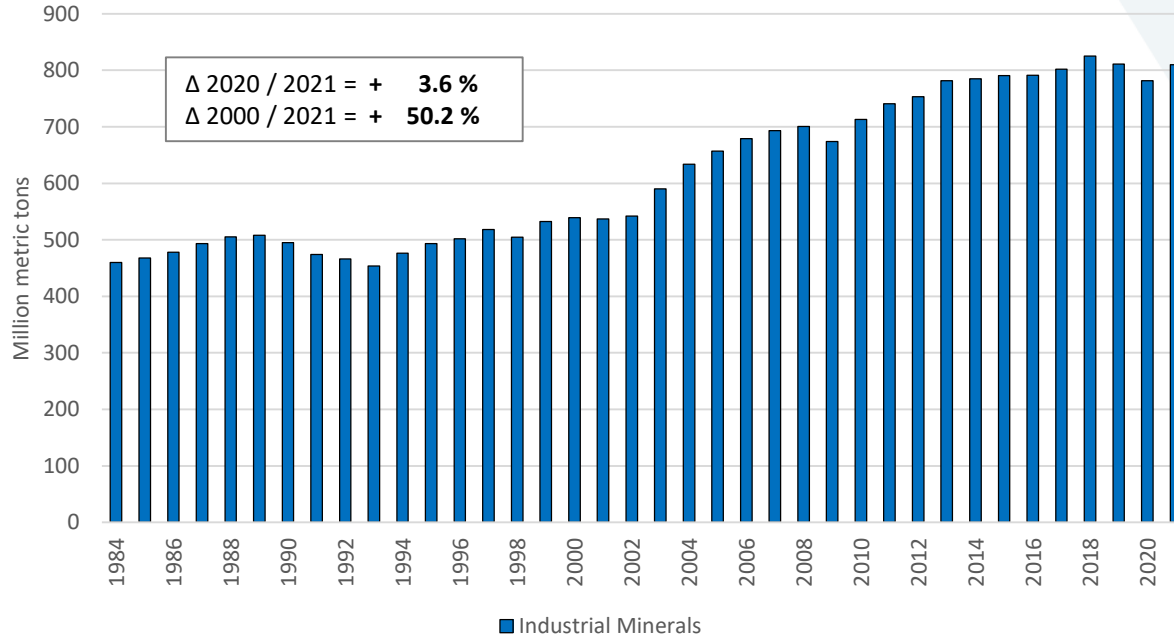
87.6 %

213 tons of primary Pd
191 tons of primary Pt
24 tons of primary Rh

World mining production 1984 – 2021
by groups of minerals, Precious Metals
(in metr. t)



World Mining Data 2023, Industrial Minerals



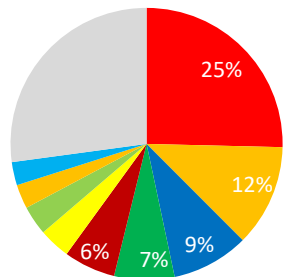
Production Δ 2017 / 2021

- ++ Perlite (+55.9%)
- ++ Fluorspar (+46.0%)
- ++ Graphite (+30,3%)
- + Boron (+16.3%)
- + Feldspar (+13,8%)
- ...
- ...
- Phosphates (-5.3%)
- Talc (-7.4%)
- Bentonite (-11.4%)
- Diamonds (Ind) (-38.3%)

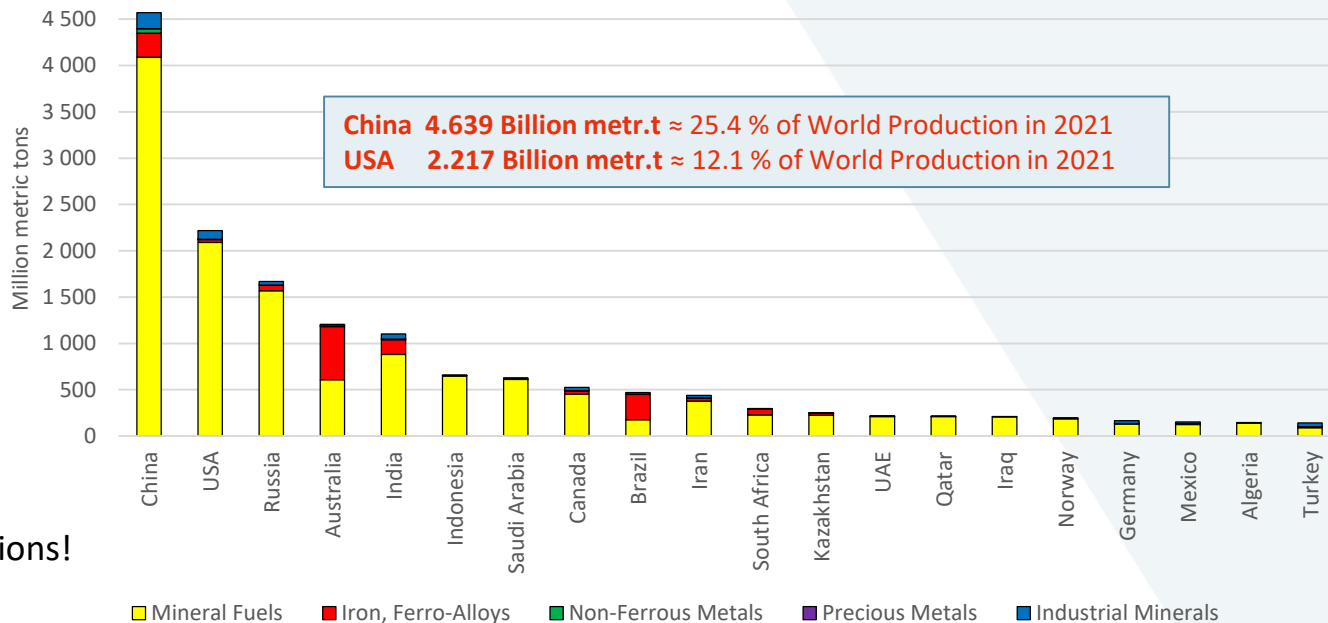
World mining production 1984 – 2021
by groups of minerals, Industrial Minerals
(in Million metr. t)



WMD 2023: Top Producer Countries 2021

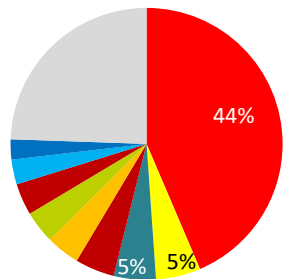


China, USA, Russia, Australia and India are the 5 biggest mining nations!

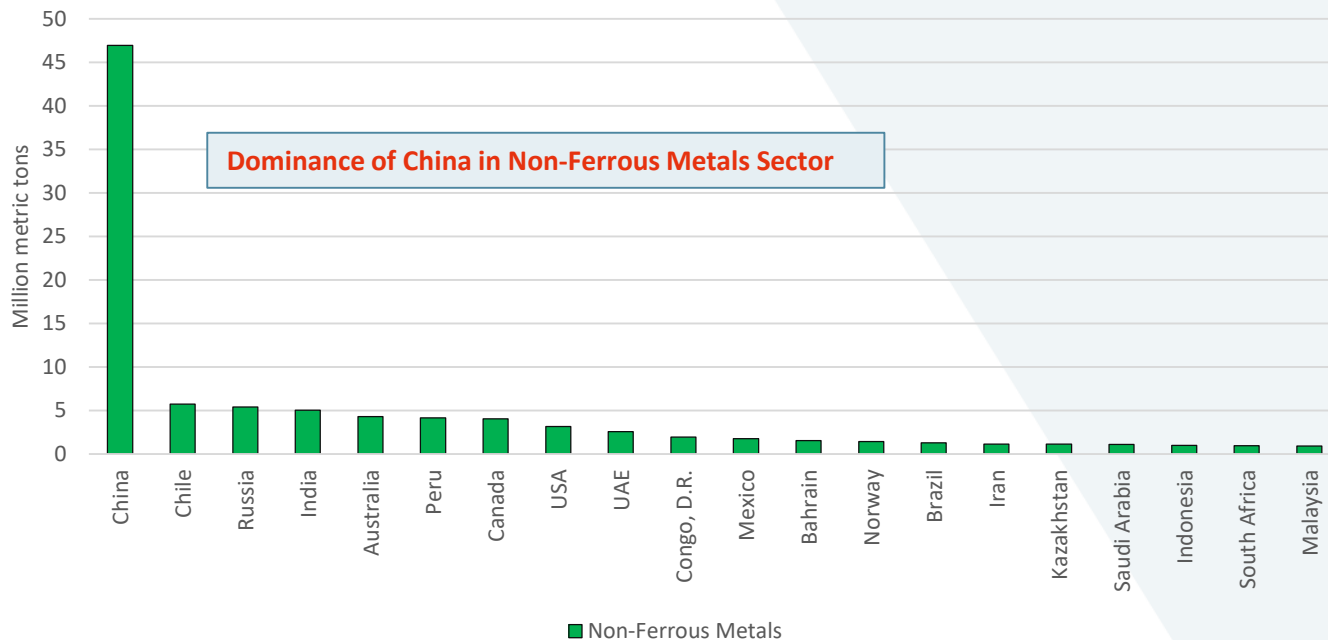




WMD 2023: Top Producer Countries 2021, Non-Ferrous Metals

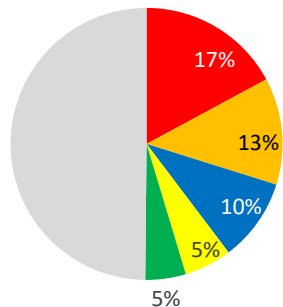


China, Chile, Russia, India and Australia are the biggest producers!

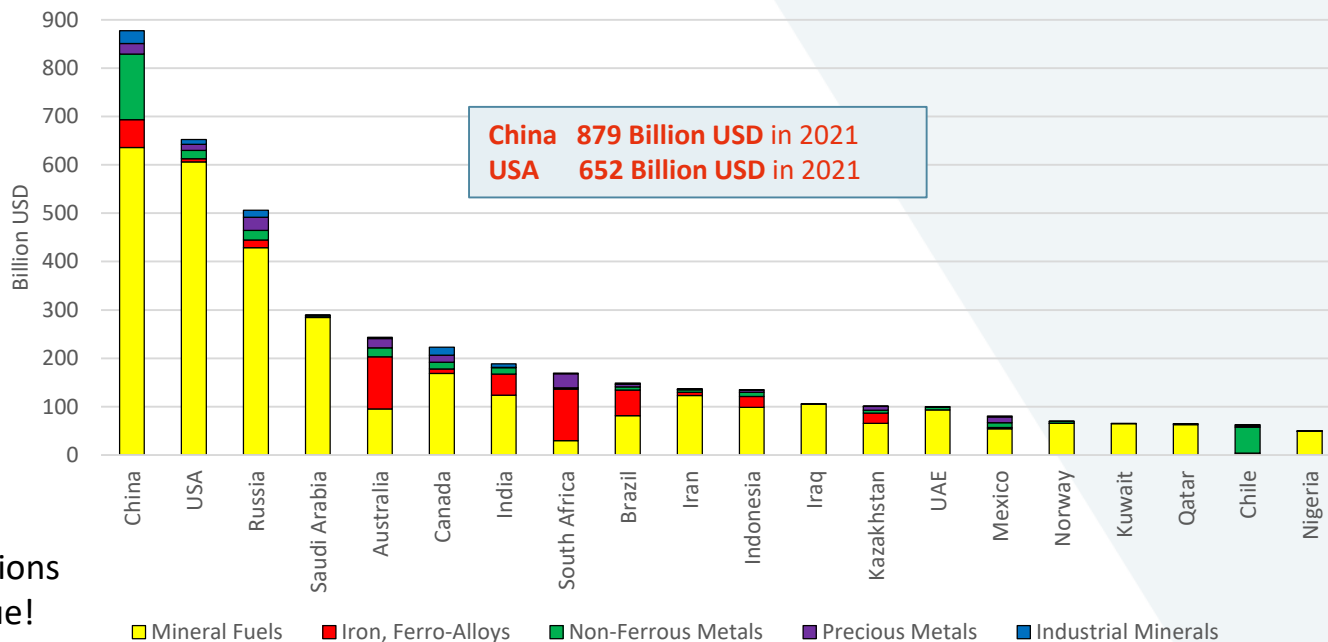




WMD 2023: Top Producer Countries 2021 by Value

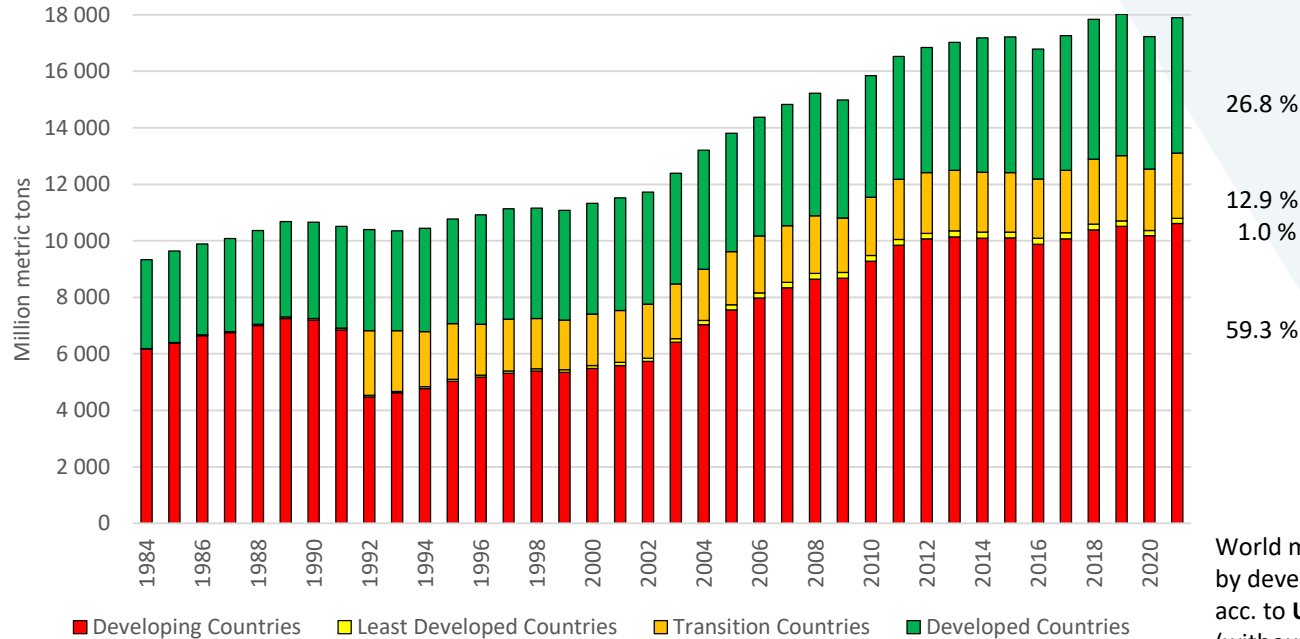


China, USA, Russia, SA and Australia are the 5 biggest mining nations expressed in mining value!



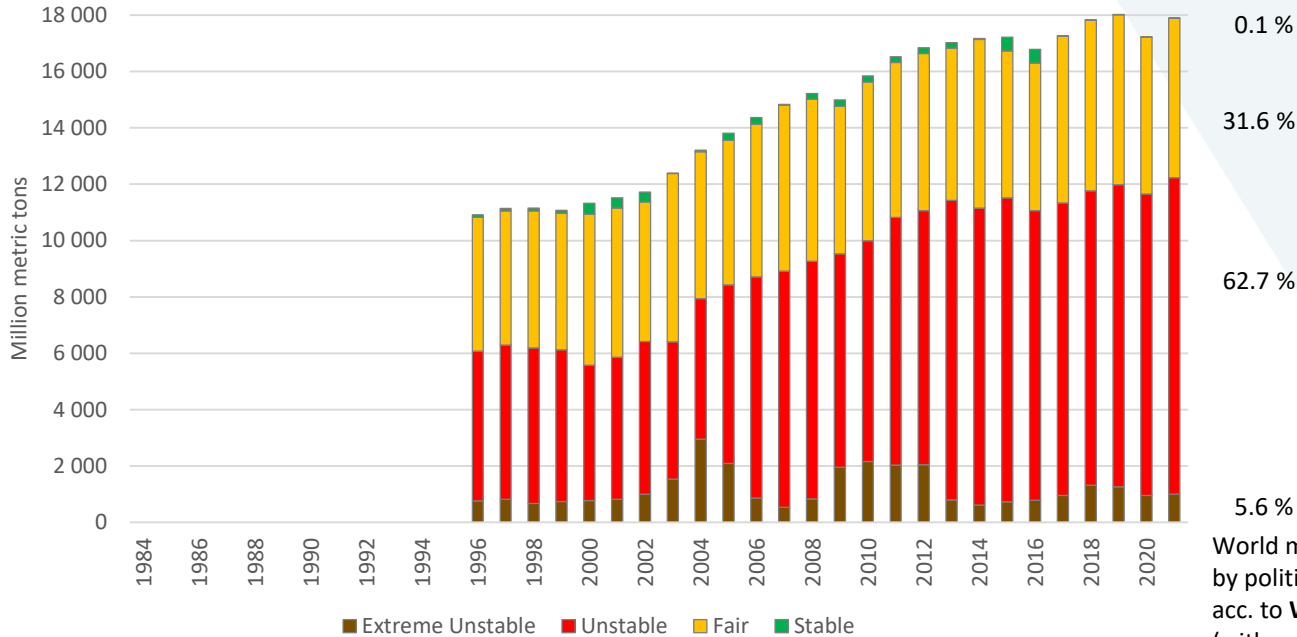


WMD 2023: Production vs. Development Status





WMD 2023: Production vs. Political Stability



World mining production 1984 - 2021
by political stability of the producer countries
acc. to **WGI by World Bank**
(without construction minerals, in Million metr. t)



WMD 2023: Production World vs. OECD vs. BRICS vs. EU

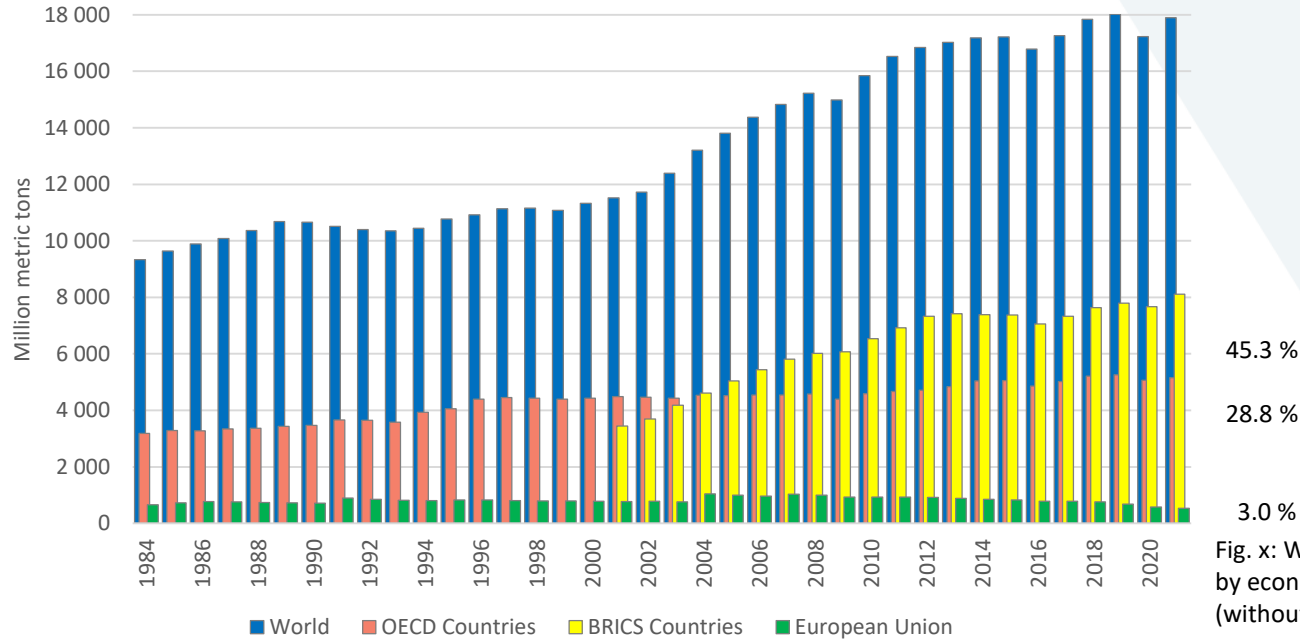
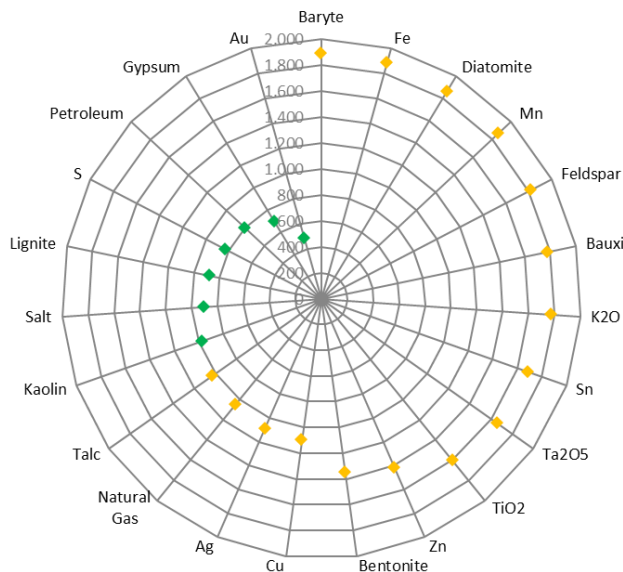


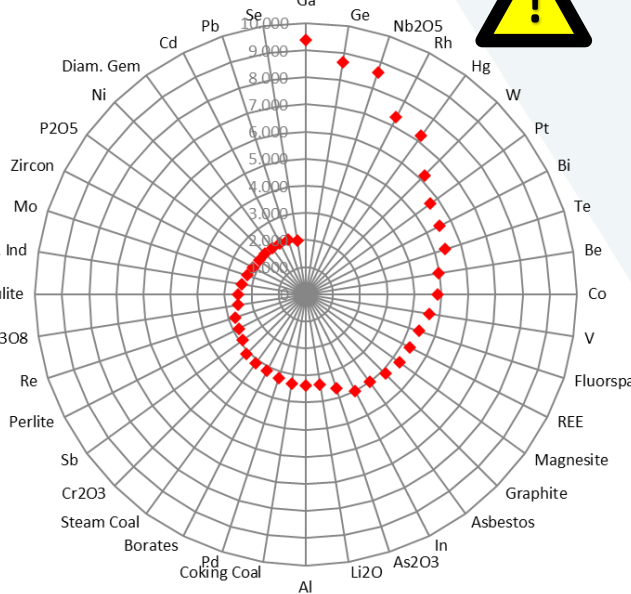
Fig. x: World mining production 1984 – 2021 by economic blocks: Europe, EU, BRICS Countries (without construction minerals, in Million metr. t)



WMD 2023: Supply Risk; Herfindahl-Hirschmann-Index (HHI)



Many Producer Countries & Uniform Distribution



Few Producer Countries & Unequal Distribution



Country Concentrations 2021

- HHI < 1 000; low
7 Commodities
- HHI < 2 000; moderate
16 Commodities
- HHI > 2 000; high
40 Commodities

- 2021 HHI > 2 000: 40 Comm.
- 2018 HHI > 2 000: 38 Comm.
- 2015 HHI > 2 000: 36 Comm.
- 2012 HHI > 2 000: 34 Comm.
- 2008 HHI > 2 000: 32 Comm.



World Mining Data 2023

WMD 2023 are available in **pdf format**  or **xlsx format**  at: <https://wmc.agh.edu.pl/> or <https://www.world-mining-data.info> or **can be ordered in printed form.**

Questionnaires for production figures 2022 were sent to IOC Members. We would be grateful for returning the questionnaires not later than

End of December 2023

to postal address:

DI Christian Reichl
Fed. Ministry of Finance
Directorate VI/5 Mineral Resources Policy
Denisgasse 31, 1200 Vienna, Austria

or to email address:

wmd@bmf.gv.at
christian.reichl@bmf.gv.at

to prepare WORLD MINING DATA 2024 as scheduled.



Thank You for Your Attention!

Christian Reichl
Austrian Federal Ministry of Finance
Directorate VI/5 Mineral Resources Policy
Vienna, Austria
christian.reichl@bmf.gv.at

