



Critical Minerals

▶ COBALT

RESERVES

Countries
The World Top 10
World Cobalt Reserves

PRODUCTION

Countries
The World Top 10
World Cobalt Production

▶ LITHIUM

RESERVES

Countries
The World Top 10
World Lithium Reserves

PRODUCTION

Countries
The World Top 9
World Lithium Production

▶ COPPER

RESERVES

Countries
The World Top 10
World Copper Reserves

PRODUCTION

Countries
The World Top 10
World Copper Production

▶ MANGANESE

RESERVES

Countries
The World Top 7
World Manganese Reserves

PRODUCTION

Countries
The World Top 9
World Manganese Production

▶ RARE EARTHS

RESERVES

Countries
The World Top 10
World Rare Earths Reserves

PRODUCTION

Countries
The World Top 10
World Rare Earths Production

▶ GRAPHITE

RESERVES

Countries
The World Top 10
World Graphite Reserves

PRODUCTION

Countries
The World Top 10
World Graphite Production

▶ NICKEL

RESERVES

Countries
The World Top 9
World Nickel Reserves

PRODUCTION

Countries
The World Top 9
World Nickel Production

▶ SILICON

PRODUCTION

Countries
The World Top 10
World Silicon Production

Executive summary

Critical minerals play a fundamental role in the development of key technologies related to the energy transition. Elements such as cobalt, lithium, nickel, manganese, and graphite are essential for battery production, while rare earths are crucial for wind energy, and silicon is essential for solar technology.

However, the extraction of these resources is highly concentrated in a limited number of Countries. This concentration poses a significant risk to supply security and undermines traditional market competition. In recent years, many critical raw materials have experienced sharp price increases, driven by a rising demand associated with the energy transition.

In terms of **reserves**, cobalt has the highest concentration – with over 50% located in the Democratic Republic of Congo – and about 40% of rare earths are found in China.

Production is also geographically concentrated. For example, 78% of graphite is produced in China, while 76% of cobalt comes from the Democratic Republic of Congo. Additionally, 69% of rare earths are extracted in China, and over 60% of nickel is produced in Indonesia. Overall, in 2024, the production of critical minerals increased by an average of 5.5% compared to the previous year, with cobalt showing the most significant growth (+21%). This increase was partly offset by a decline in manganese and nickel production.

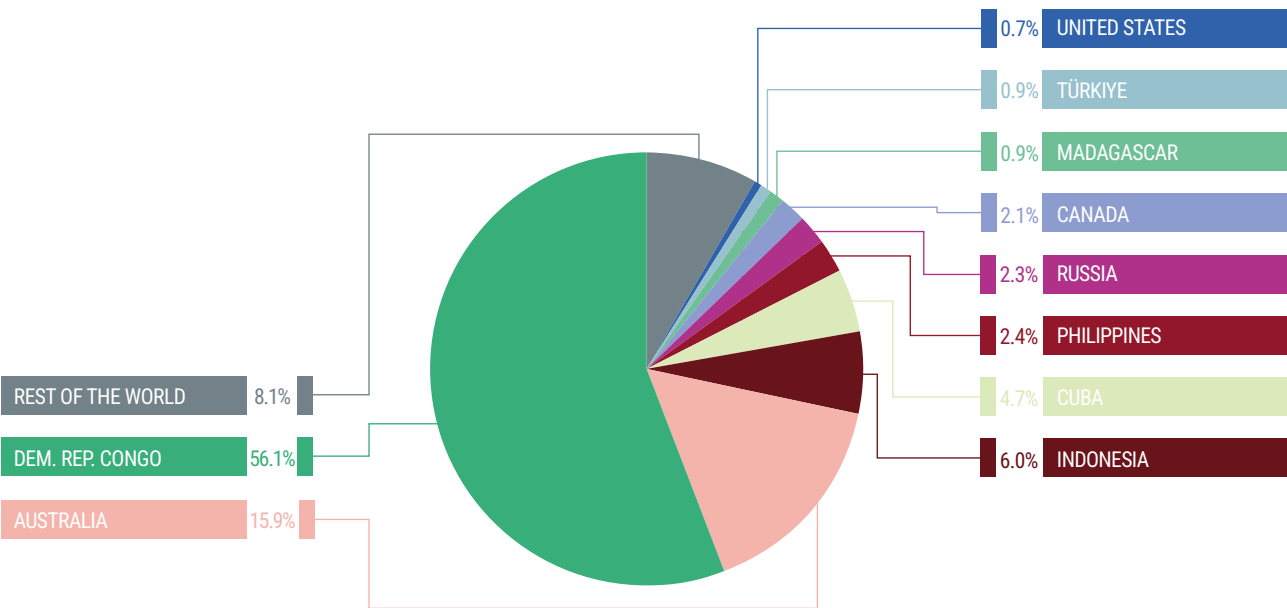
Cobalt - Reserves

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	1,400,000	1,100,000	1,200,000	1,400,000	1,400,000	1,500,000	1,700,000	1,700,000
Brazil	89,000	78,000						
Canada	150,000	240,000	230,000	220,000	220,000	220,000	230,000	220,000
China	80,000	80,000	80,000	80,000	80,000	140,000		
Cuba	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Dem. Rep. Congo	3,400,000	3,400,000	3,600,000	3,600,000	3,500,000	4,000,000	6,000,000	6,000,000
Indonesia					600,000	600,000	500,000	640,000
Madagascar		130,000	120,000	100,000	100,000	100,000	100,000	100,000
Morocco	20,000		18,000	14,000	13,000	13,000		
New Caledonia	370,000	200,000						
Papua New Guinea			56,000	51,000	47,000	47,000	49,000	62,000
Philippines		250,000	260,000	260,000	260,000	260,000	260,000	260,000
Russia	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
South Africa		31,000	50,000	40,000				
Türkiye						36,000	91,000	91,000
United States	33,000	23,000	55,000	53,000	69,000	69,000	69,000	70,000
Zambia	270,000	270,000						
Others	740,000	610,000	570,000	560,000	610,000	610,000	780,000	800,000
World	7,302,000	7,162,000	6,989,000	7,128,000	7,649,000	8,345,000	10,529,000	10,693,000

The World Top 10 (2024)

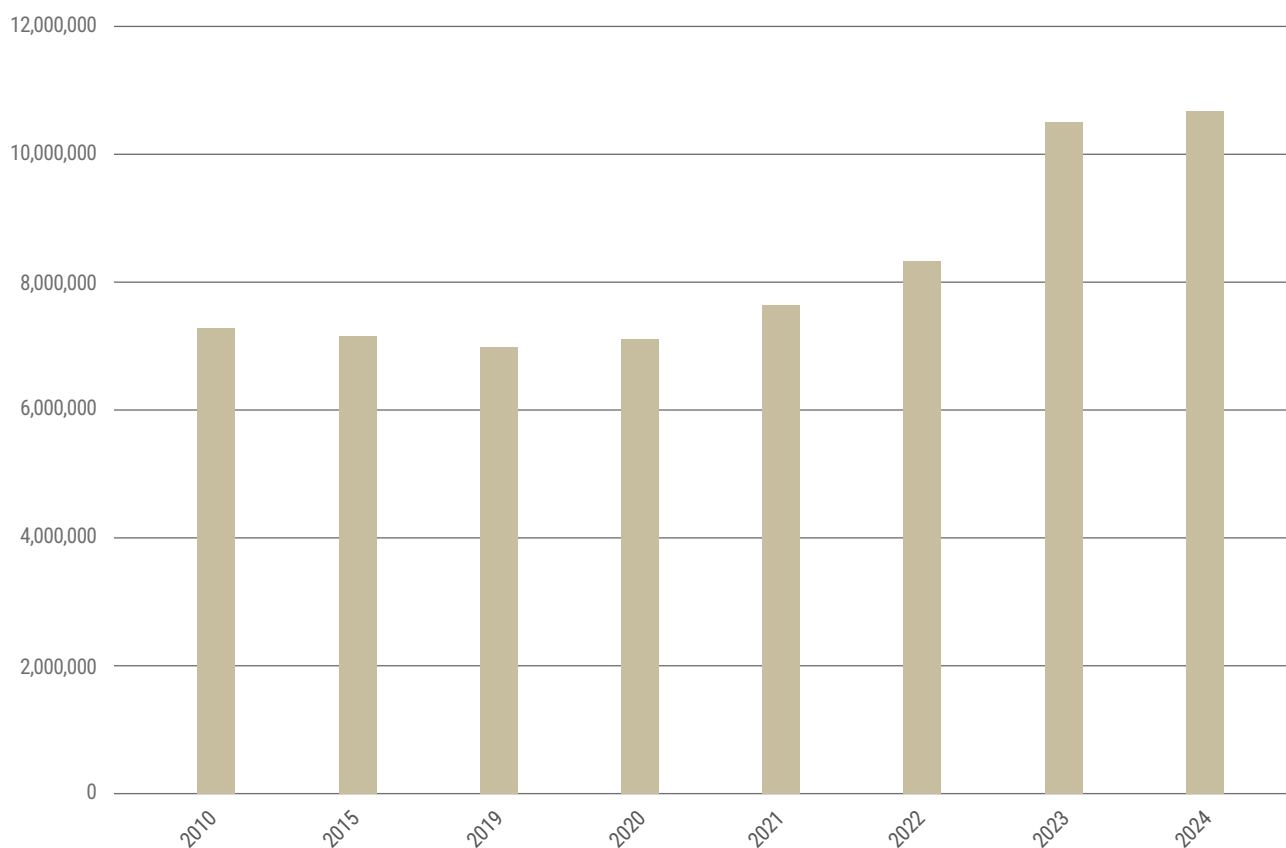


^(*) Data source: U.S. Geological Survey.

Cobalt - Reserves

World Cobalt Reserves

(metric tons)



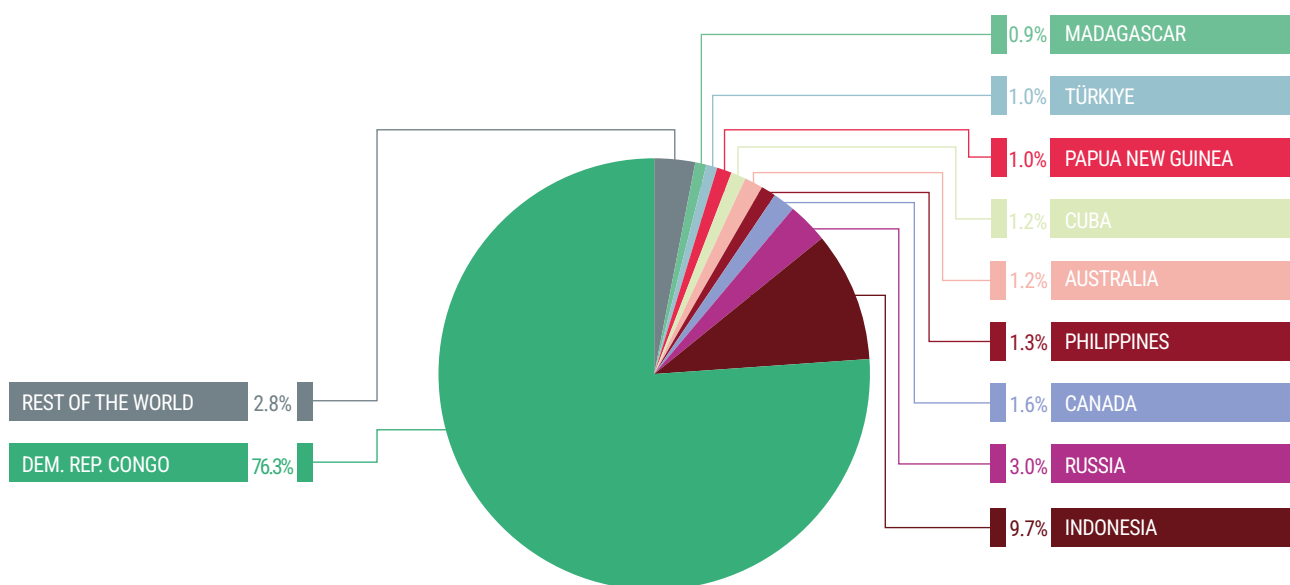
Cobalt - Production

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	3,850	6,000	5,740	5,630	5,295	5,790	5,220	3,600
Brazil	1,600							
Canada	4,600	6,900	3,340	3,690	4,361	3,060	4,220	4,500
China	6,500	7,700	2,500	2,200	2,200	2,200		
Dem. Rep. Congo	47,400	63,000	100,000	98,000	119,000	144,000	175,000	220,000
Cuba	3,600	4,300	3,800	3,800	4,000	3,700	3,300	3,500
Indonesia				1,100	2,700	9,600	19,000	28,000
Madagascar		3,700	3,400	850	2,800	3,500	4,000	2,600
Morocco	2,200		2,300	2,300	2,300	2,000		
New Caledonia	1,000	3,680				2,000	2,570	1,500
Papua New Guinea			2,910	2,940	2,953	2,990	3,070	2,800
Philippines		4,300	5,100	4,500	3,600	3,900	3,800	3,800
Russia	6,200	6,200	6,300	9,000	8,000	9,200	8,700	8,700
South Africa		3,000	2,100					
Türkiye					2,400	2,100	2,500	2,700
United States		760	500	600	650	500	500	300
Zambia	5,700	4,600						
Others	6,800	11,600	6,320	7,640	4,567	6,600	6,080	6,200
World	89,450	125,740	144,310	142,250	164,826	201,140	237,960	288,200

The World Top 10 (2024)

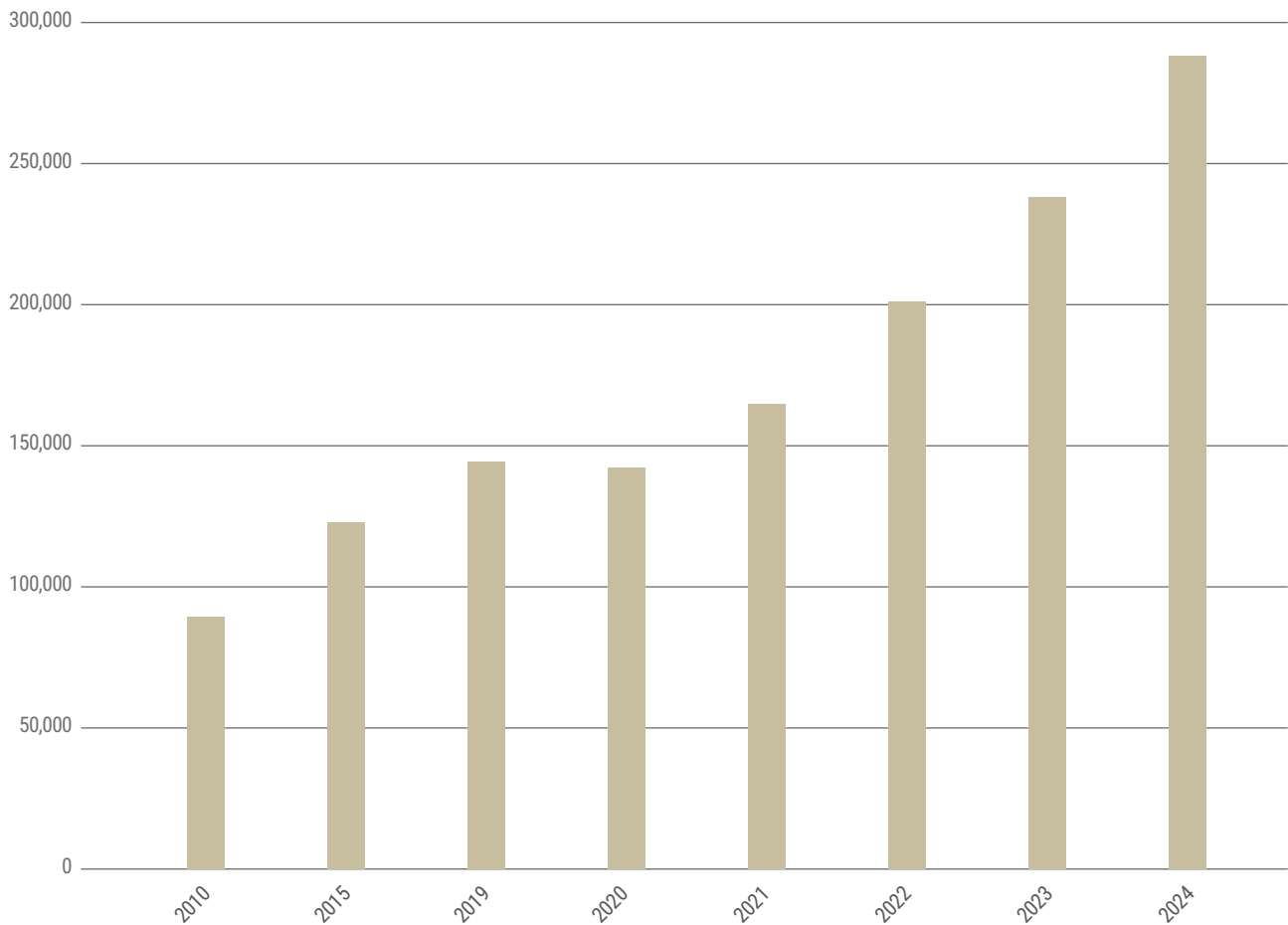


^(*) Data source: U.S. Geological Survey.

Cobalt - Production

World Cobalt Production

(metric tons)



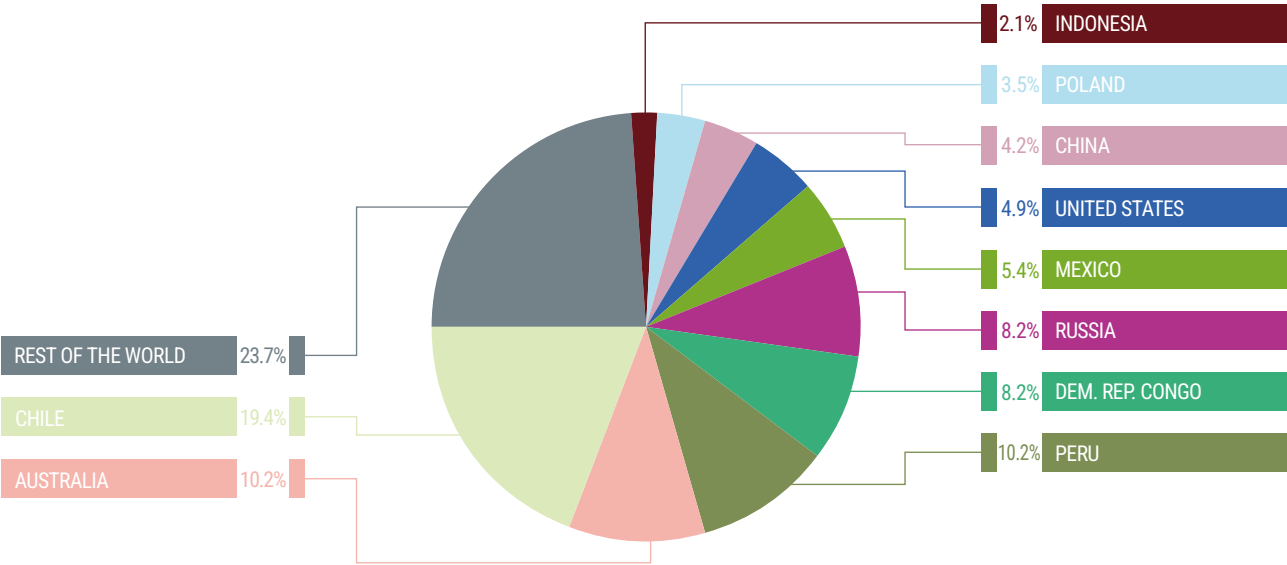
Copper - Reserves

Countries^(*)

(thousand metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	80,000	88,000	87,000	88,000	93,000	97,000	100,000	100,000
Canada	8,000	11,000		9,000	9,800	7,600	7,600	8,300
Chile	150,000	210,000	200,000	200,000	200,000	190,000	190,000	190,000
China	30,000	30,000	26,000	26,000	26,000	27,000	41,000	41,000
Dem. Rep. Congo		20,000	19,000	19,000	31,000	31,000	80,000	80,000
Germany				2,000				
India								2,200
Indonesia	30,000		28,000		24,000	24,000	24,000	21,000
Kazakhstan	18,000		20,000	20,000	20,000	20,000	20,000	20,000
Mexico	38,000	46,000	53,000	53,000	53,000	53,000	53,000	53,000
Peru	90,000	82,000	87,000	92,000	77,000	81,000	120,000	100,000
Poland	26,000			32,000	31,000	30,000	34,000	34,000
Russia	30,000	30,000	61,000	61,000	62,000	62,000	80,000	80,000
United States	35,000	33,000	51,000	48,000	48,000	44,000	50,000	47,000
Zambia	20,000	20,000	19,000	21,000	21,000	19,000	21,000	21,000
Others	80,000	150,000	220,000	200,000	180,000	200,000	180,000	180,000
World	635,000	720,000	871,000	871,000	875,800	885,600	1,000,600	977,500

The World Top 10 (2023)

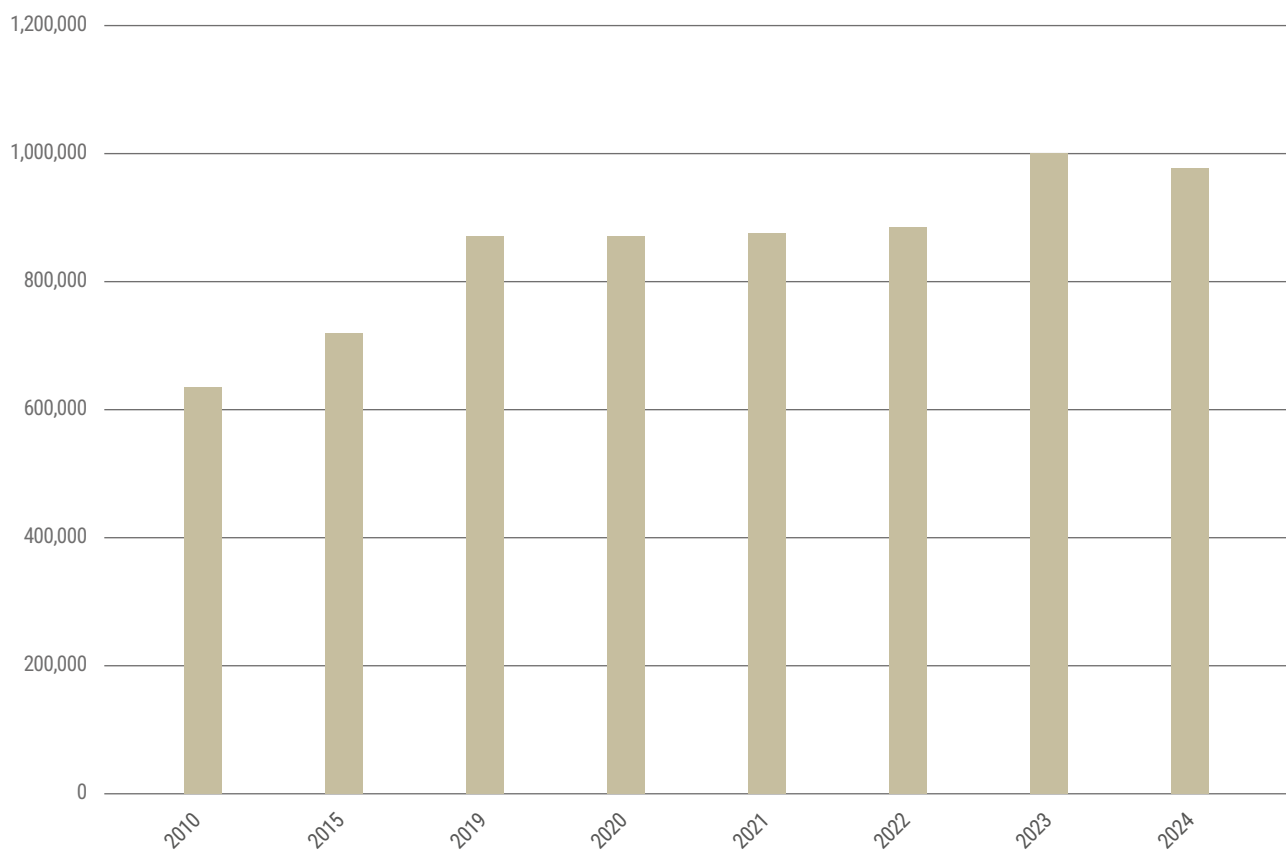


^(*) Data source: U.S. Geological Survey.

Copper - Reserves

World Copper Reserves

(thousand metric tons)

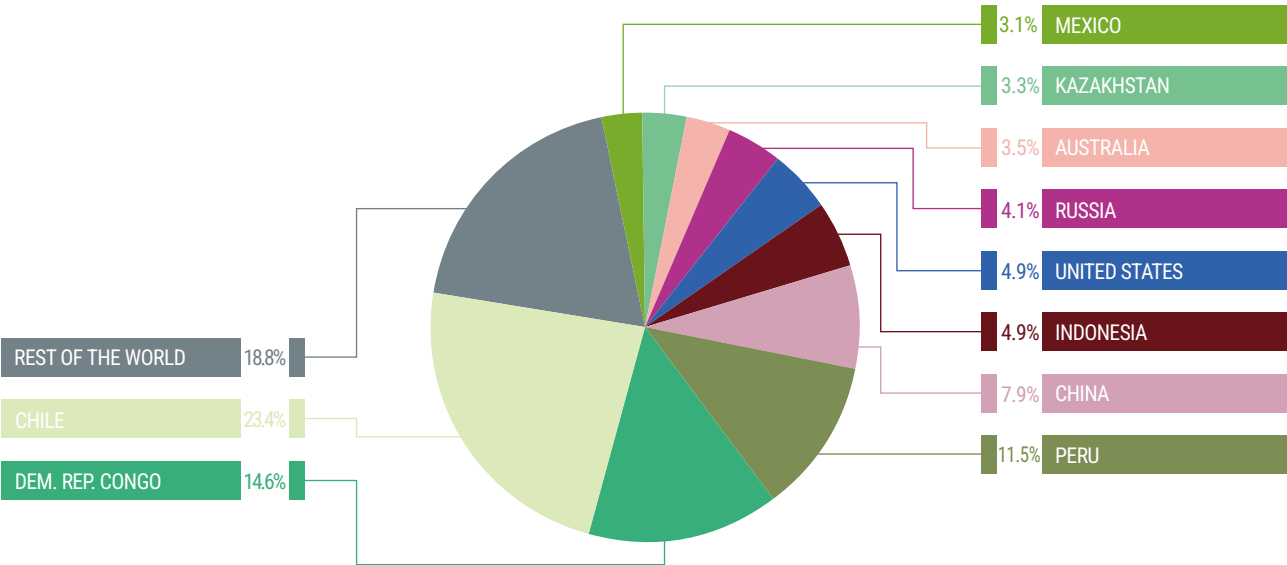


Copper - Production

Countries(*) (thousand metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	870	971	934	885	813	819	778	800
Canada	525	697	573	585	550	520	500	450
Chile	5,420	5,760	5,790	5,730	5,620	5,330	5,250	5,300
China	1,190	1,710	1,680	1,720	1,910	1,940	1,820	1,800
Dem. Rep. Congo	343	1,020	1,290	1,600	1,740	2,350	2,930	3,300
India							27	30
Indonesia	872			505	731	941	907	1,100
Kazakhstan	380		562	552	510	593	740	740
Mexico	260	594	715	733	734	754	699	700
Peru	1,250	1,700	2,460	2,150	2,300	2,450	2,760	2,600
Poland	425		399	393	391	393	395	410
Russia	703	732	801	810	940	936	890	930
United States	1,110	1,380	1,260	1,200	1,230	1,230	1,130	1,100
Zambia	690	712	797	853	842	797	712	680
Others	1,900	3,800	3,100	2,840	2,850	2,850	3,020	2,700
World	15,938	19,076	20,361	20,556	21,161	21,903	22,558	22,640

The World Top 10 (2024)

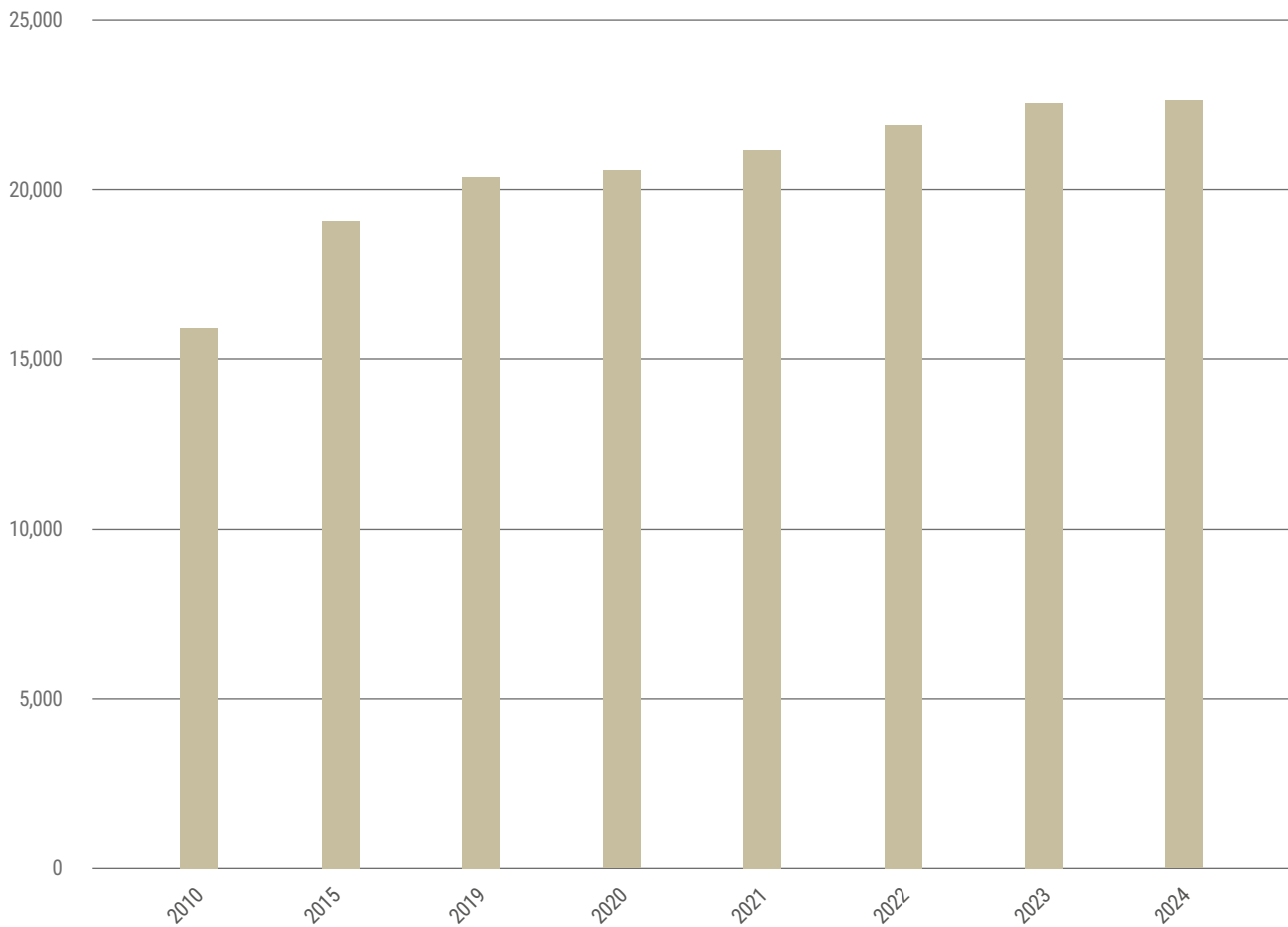


(*) Data source: U.S. Geological Survey.

Copper - Production

World Copper Production

(thousand metric tons)



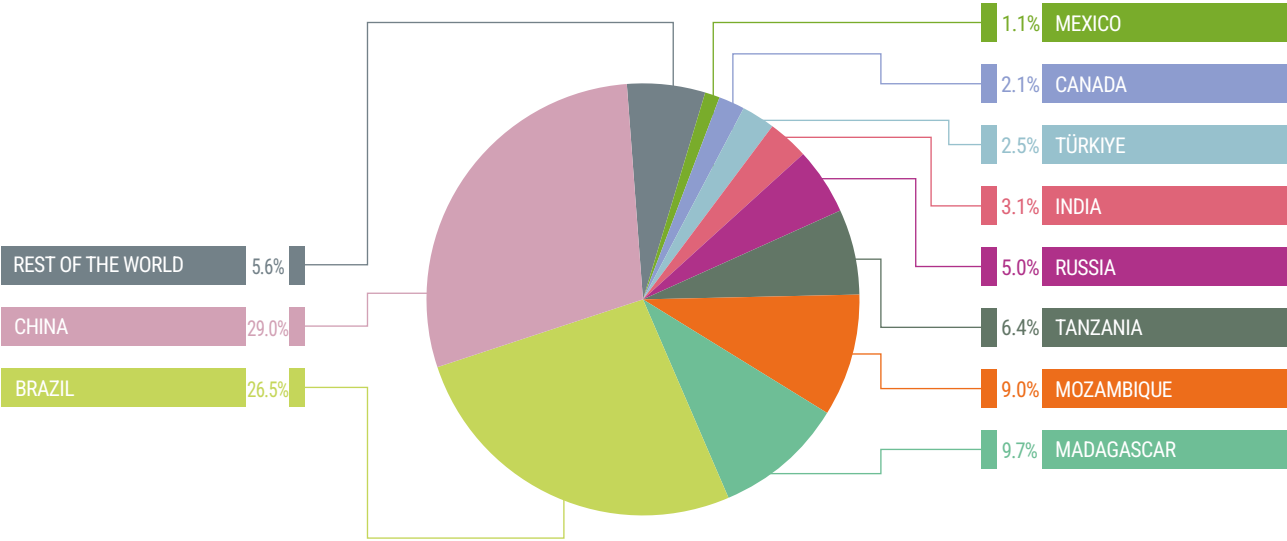
Graphite - Reserves

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Brazil	360,000	72,000,000	72,000,000	70,000,000	70,000,000	74,000,000	74,000,000	74,000,000
Canada							5,700,000	5,900,000
China	55,000,000	55,000,000	73,000,000	73,000,000	73,000,000	52,000,000	78,000,000	81,000,000
India	5,200,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,600,000	8,600,000
North Korea			2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
South Korea						1,800,000	1,800,000	1,800,000
Madagascar	940,000	940,000	1,600,000	26,000,000	26,000,000	26,000,000	24,000,000	27,000,000
Mexico	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000
Mozambique			25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000
Norway			600,000	600,000	600,000	600,000	600,000	600,000
Russia						14,000,000	14,000,000	14,000,000
Sri Lanka				1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Tanzania			18,000,000	17,000,000	18,000,000	18,000,000	18,000,000	18,000,000
Türkiye		90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	6,900,000	6,900,000
Uzbekistan			7,600,000	7,600,000	7,600,000	7,600,000		
Other	6,400,000							9,700,000
World	71,000,000	229,040,000	300,900,000	323,800,000	324,800,000	323,600,000	263,200,000	279,100,000

The World Top 10 (2024)

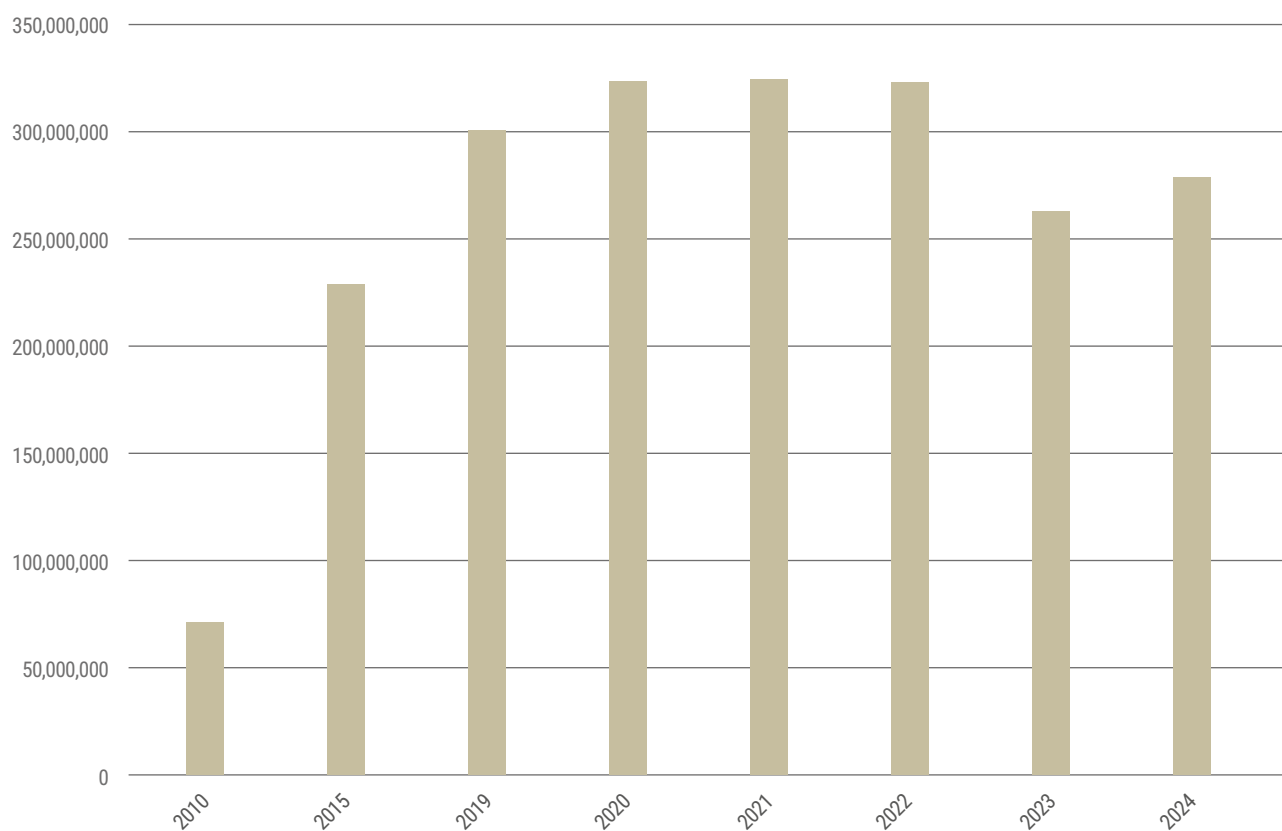


^(*) Data source: U.S. Geological Survey.

Graphite - Reserves

World Graphite Reserves

(metric tons)



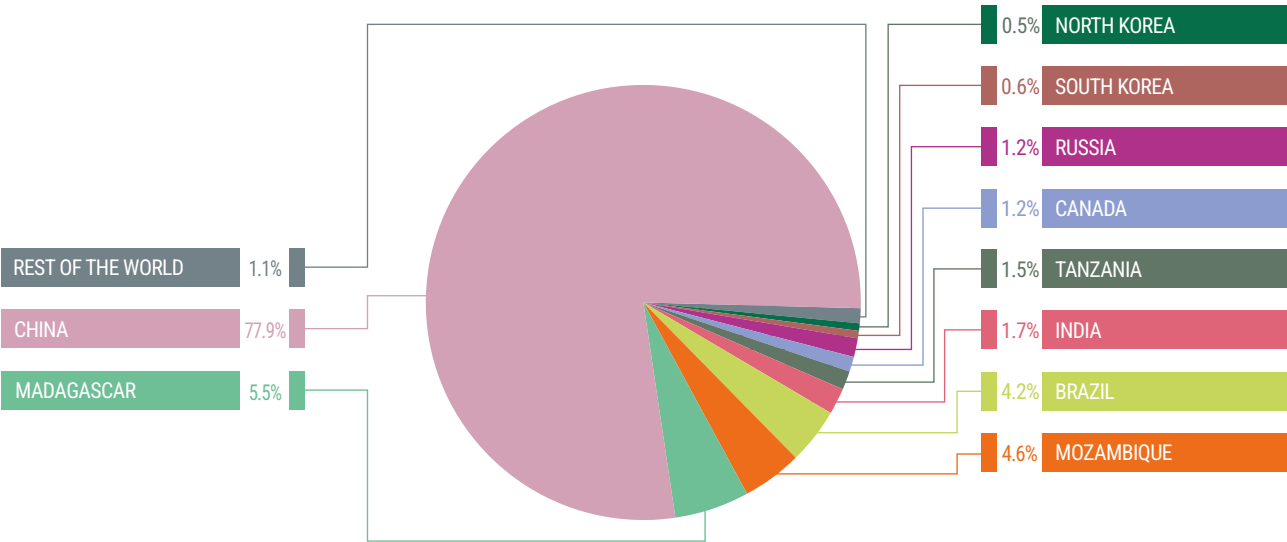
Graphite - Production

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Austria			1,000	500	500	500	500	500
Brazil	76,000	80,000	96,000	63,500	82,000	72,000	66,300	68,000
Canada	25,000	30,000	11,000	8,000	12,000	13,000	5,470	20,000
China	600,000	780,000	700,000	762,000	820,000	1,210,000	1,210,000	1,270,000
Germany			800	300	250	170	180	170
India	140,000	170,000	35,000	6,000	7,000	11,000	25,600	27,800
North Korea	30,000	30,000	6,000	8,100	8,100	8,100	8,100	8,100
South Korea					10,500	23,800	9,620	9,600
Madagascar	5,000	5,000	48,000	20,900	70,000	130,000	63,000	89,000
Mexico	7,000	22,000	9,000	3,300	2,100	2,000	1,300	900
Mozambique			107,000	28,000	72,000	166,000	98,000	75,000
Norway	2,000	8,000	16,000	12,000	6,290	10,380	6,480	7,000
Pakistan			14,000					
Romania	20,000							
Russia		15,000	25,100	25,000	15,000	16,000	15,000	20,000
Sri Lanka	8,000	4,000	4,000	4,000	3,000	2,600	3,000	3,300
Tanzania			150			6,120	13,200	25,000
Türkiye		32,000	2,000	2,500	2,700	2,800	2,800	3,100
Ukraine	6,000	5,000	20,000	16,000	10,000	1,000	1,670	1,200
Uzbekistan			100	100	110			
Vietnam			5,000	5,000	5,000	500	2,500	2,000
Zimbabwe		7,000						
Other	6,000							
World	925,000	1,188,000	1,100,150	965,200	1,126,550	1,675,970	1,532,720	1,630,670

The World Top 10 (2024)

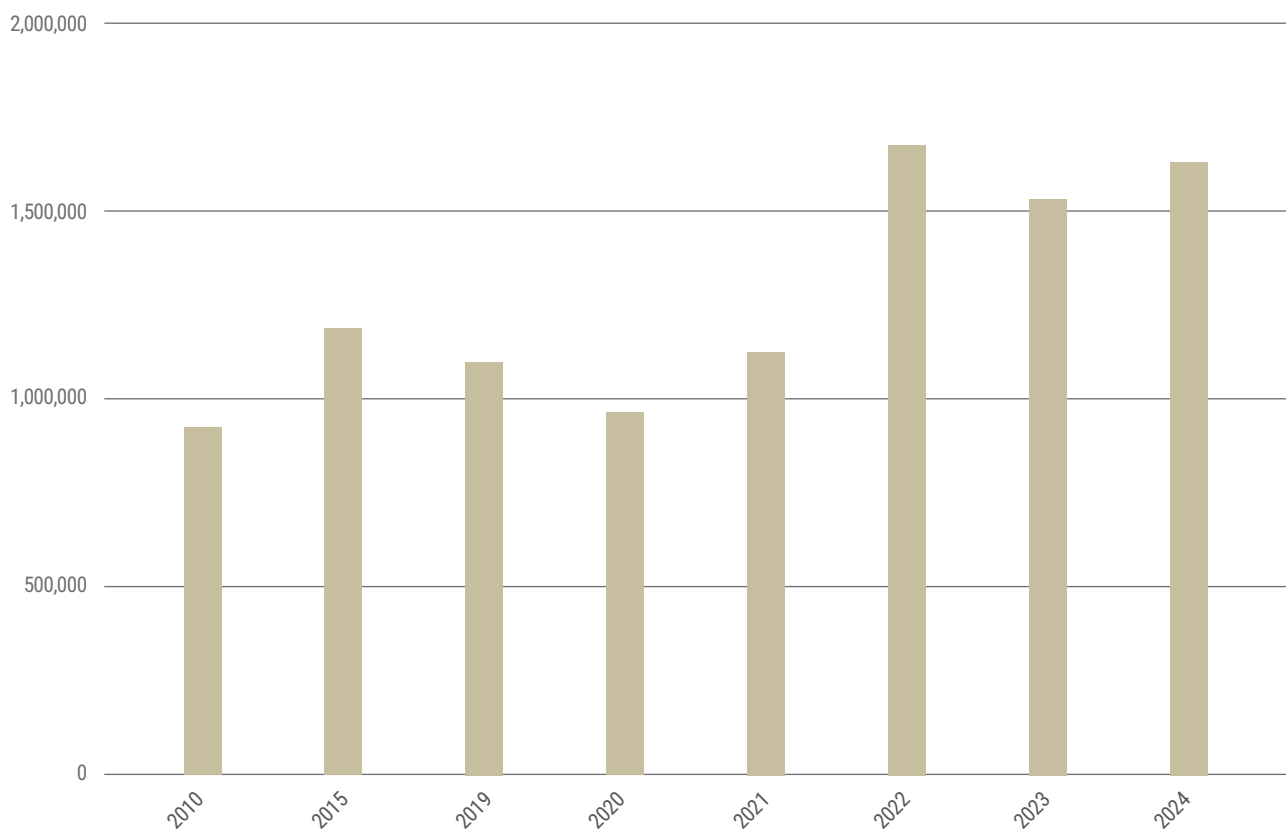


^(*) Data source: U.S. Geological Survey.

Graphite - Production

World Graphite Production

(metric tons)



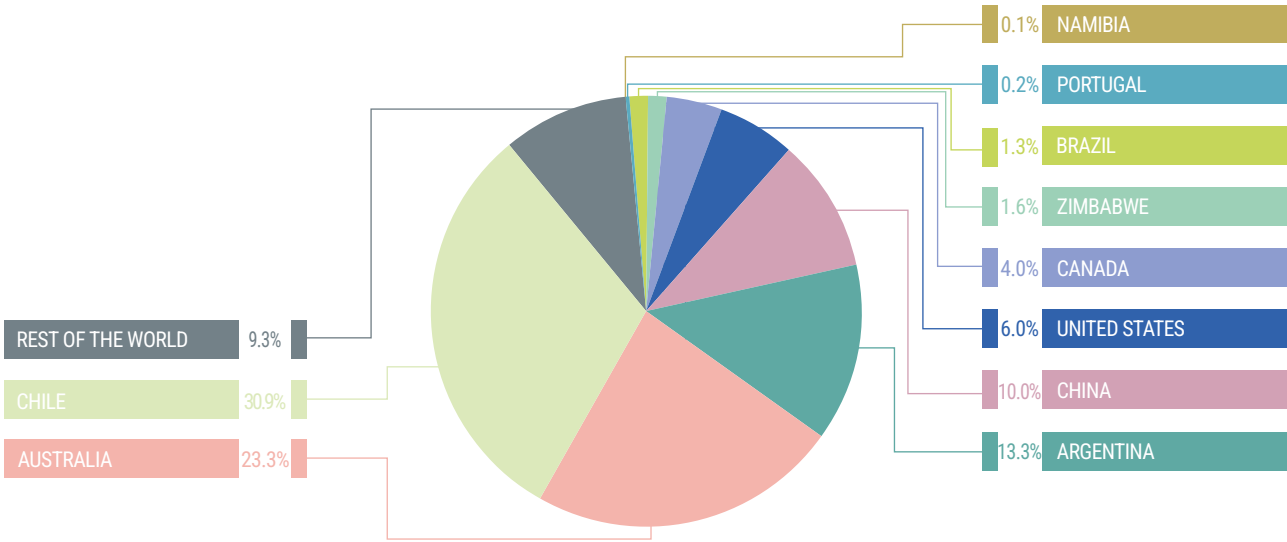
Lithium - Reserves

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Argentina	850,000	2,000,000	1,700,000	1,900,000	2,200,000	2,700,000	3,600,000	4,000,000
Australia	580,000	1,500,000	2,800,000	4,700,000	5,700,000	6,200,000	6,200,000	7,000,000
Brazil	64,000	48,000	95,000	95,000	95,000	250,000	390,000	390,000
Canada			370,000	530,000		930,000	930,000	1,200,000
Chile	7,500,000	7,500,000	8,600,000	9,200,000	9,200,000	9,300,000	9,300,000	9,300,000
China	3,500,000	3,200,000	1,000,000	1,500,000	1,500,000	2,000,000	3,000,000	3,000,000
Namibia								14,000
Portugal	10,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
United States	38,000	38,000	630,000	750,000	750,000	1,000,000	1,100,000	1,800,000
Zimbabwe	23,000	23,000	230,000	220,000	220,000	310,000	310,000	480,000
Others			1,100,000	2,100,000	2,700,000	3,300,000	2,800,000	2,800,000
World	12,565,000	14,369,000	16,585,000	21,055,000	22,425,000	26,050,000	27,690,000	30,044,000

The World Top 10 (2024)

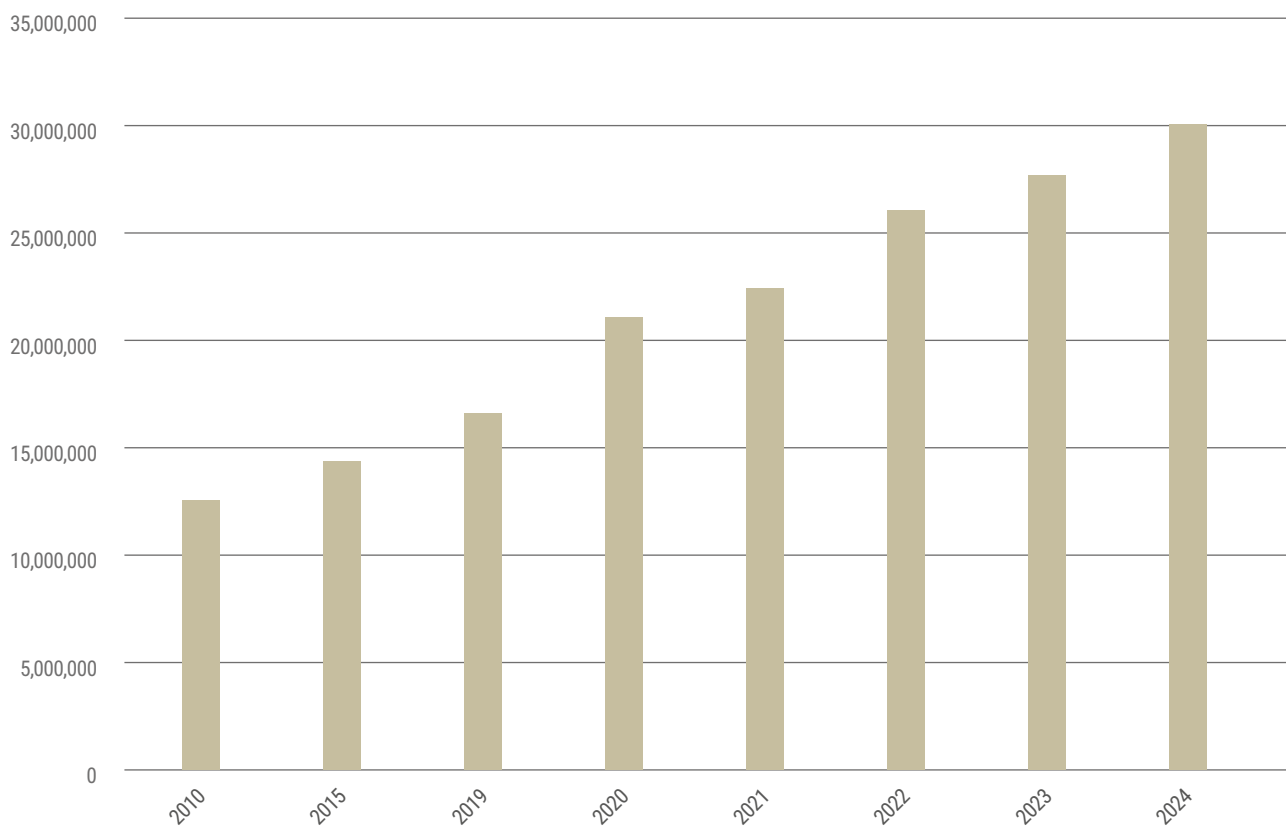


^(*) Data source: U.S. Geological Survey.

Lithium - Reserves

World Lithium Reserves

(metric tons)



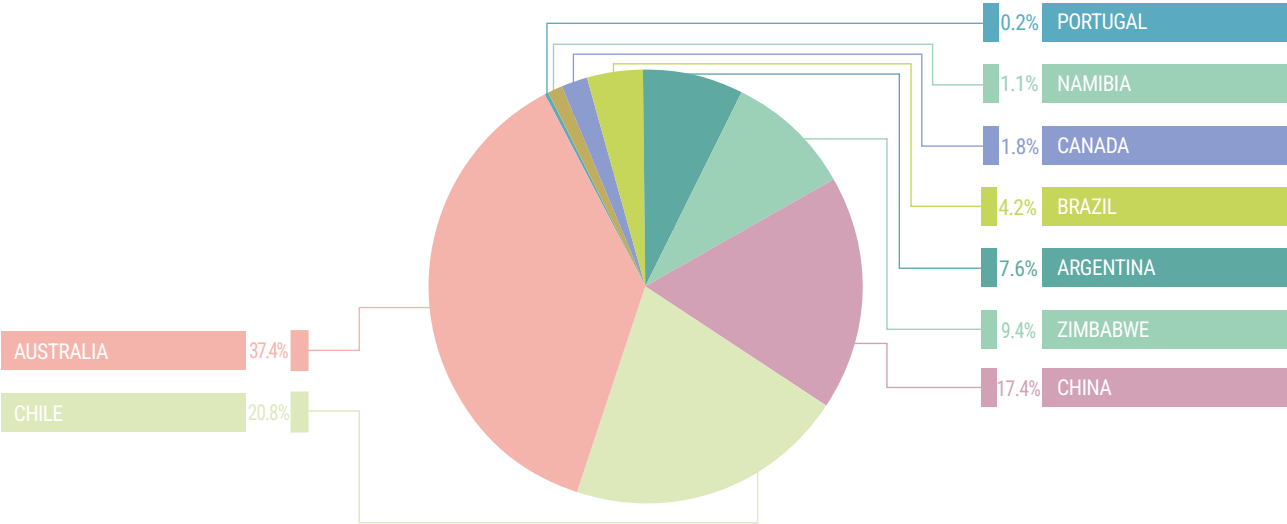
Lithium - Production

Countries(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Argentina	2,950	3,600	6,300	5,900	5,970	6,590	8,630	18,000
Australia	9,260	14,100	45,000	39,700	55,300	74,700	91,700	88,000
Brazil	160	200	2,400	1,420	1,700	2,630	5,260	10,000
Canada			200			520	3,240	4,300
Chile	10,510	10,500	19,300	21,500	28,300	38,000	41,400	49,000
China	3,950	2,000	10,800	13,300	14,000	22,600	35,700	41,000
Namibia							2,700	2,700
Portugal	800	200	900	348	900	380	380	380
Zimbabwe	470	900	1,200	417	710	1,030	14,900	22,000
World	28,100	31,500	86,100	82,585	106,880	146,450	203,910	235,380

The World Top 9 (2024)

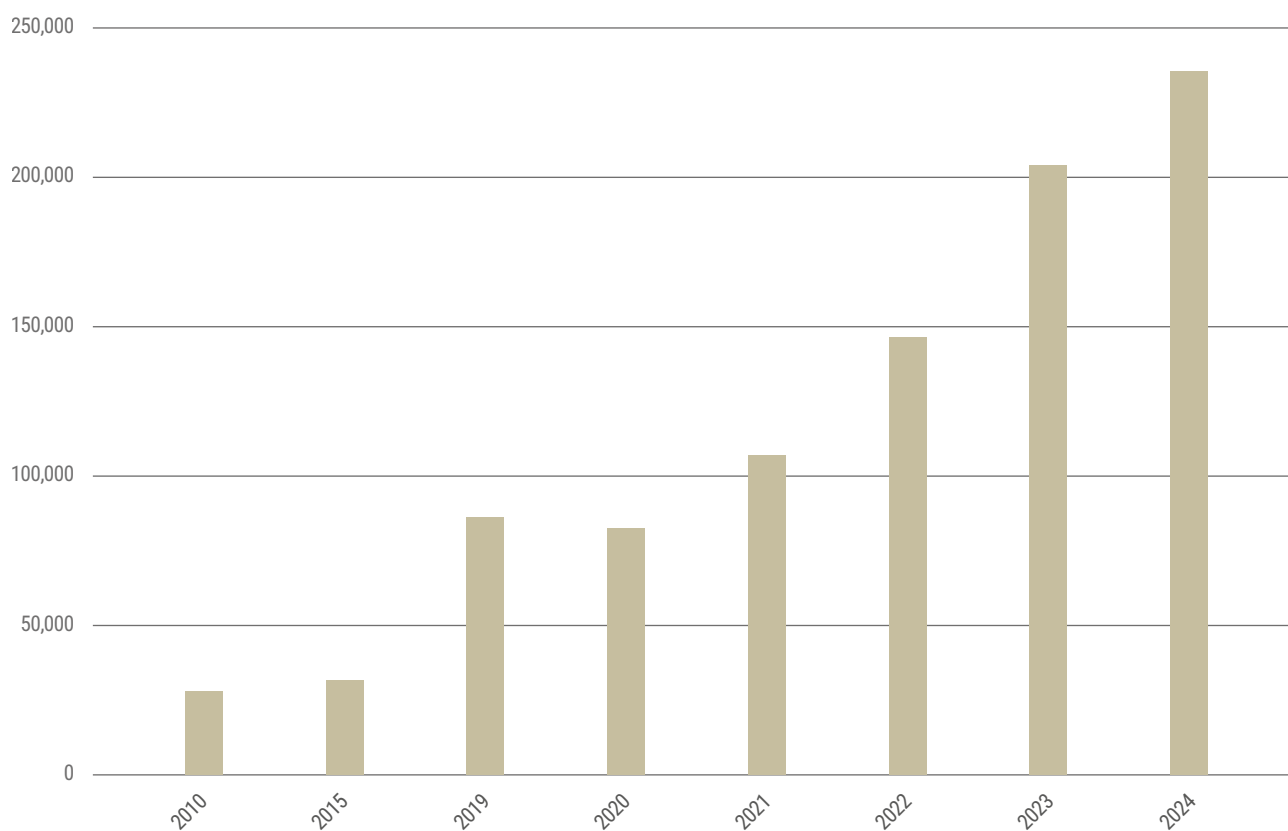


(*) Data source: U.S. Geological Survey.

Lithium - Production

World Lithium Production

(metric tons)



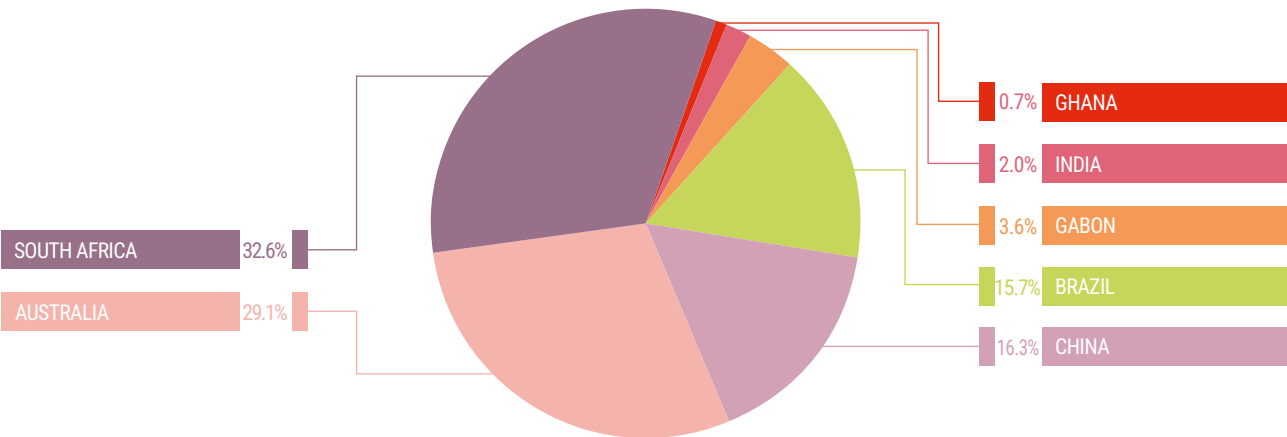
Manganese - Reserves

Countries^(*)

(thousand metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	93,000	91,000	100,000	230,000	270,000	270,000	500,000	500,000
Brazil	110,000	50,000	140,000	270,000	270,000	270,000	270,000	270,000
China	44,000	44,000	54,000	54,000	54,000	280,000	280,000	280,000
Gabon	52,000	22,000	61,000	61,000	61,000	61,000	61,000	61,000
Ghana		13,000	13,000	13,000	13,000	13,000	13,000	13,000
India	56,000	52,000	34,000	34,000	34,000	34,000	34,000	34,000
Kazakhstan		5,000	5,000	5,000	5,000	5,000	5,000	
Mexico	4,000	5,000	5,000	5,000	5,000	5,000	5,000	
South Africa	120,000	200,000	260,000	520,000	640,000	640,000	600,000	560,000
Ukraine	140,000	140,000	140,000	140,000	140,000	140,000	140,000	
World	619,000	622,000	812,000	1,332,000	1,492,000	1,718,000	1,908,000	1,718,000

The World Top 7 (2024)

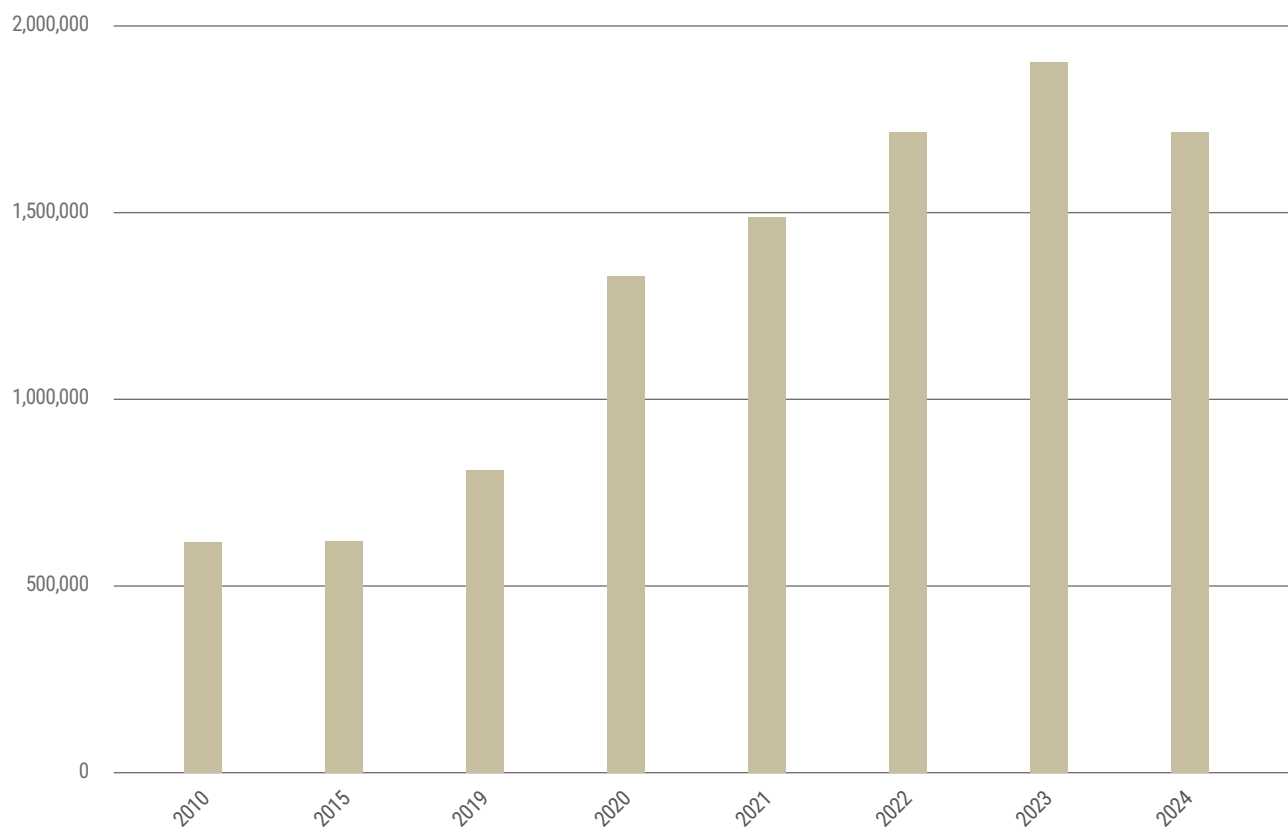


^(*) Data source: U.S. Geological Survey.

Manganese - Reserves

World Manganese Reserves

(thousand metric tons)

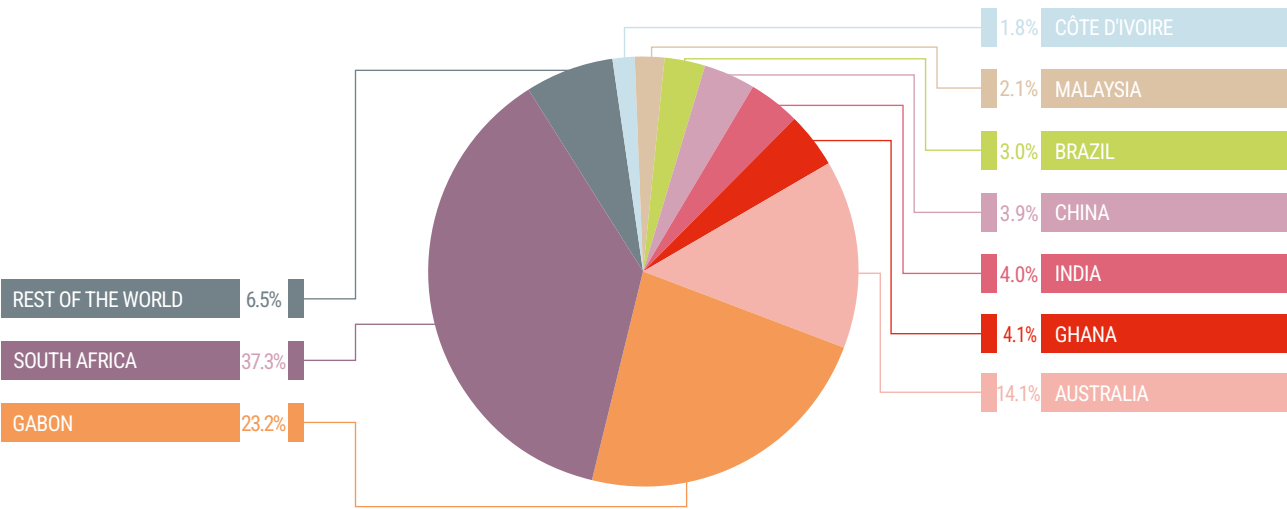


Manganese - Production

Countries(*)
(thousand metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	3,100	2,450	3,180	3,330	3,260	3,040	2,860	2,800
Brazil	780	1,090	1,740	494	542	624	580	590
Burma			430	254	206	207	210	
China	2,600	3,000	1,330	1,340	991	743	767	770
Côte d'Ivoire			482	525	362	394	357	360
Gabon	1,420	2,020	2,510	3,310	4,340	4,670	4,490	4,600
Georgia			116	186	224	166	160	
Ghana		416	1,550	637	940	844	818	820
India	1,000	900	801	632	453	721	744	800
Kazakhstan		222	140	158	90	129	130	
Malaysia		201	390	347	356	247	410	410
Mexico	175	220	202	198	226	221	220	
South Africa	2,900	5,900	5,800	6,500	7,200	7,300	7,300	7,400
Ukraine	540	410	500	578	600	323	320	
Vientnam			158	121	146	155	160	
Other	1,340	678	270	260	150	325	1,230	1,300
World	13,855	17,507	19,599	18,870	20,086	20,109	20,756	19,850

The World Top 9 (2024)

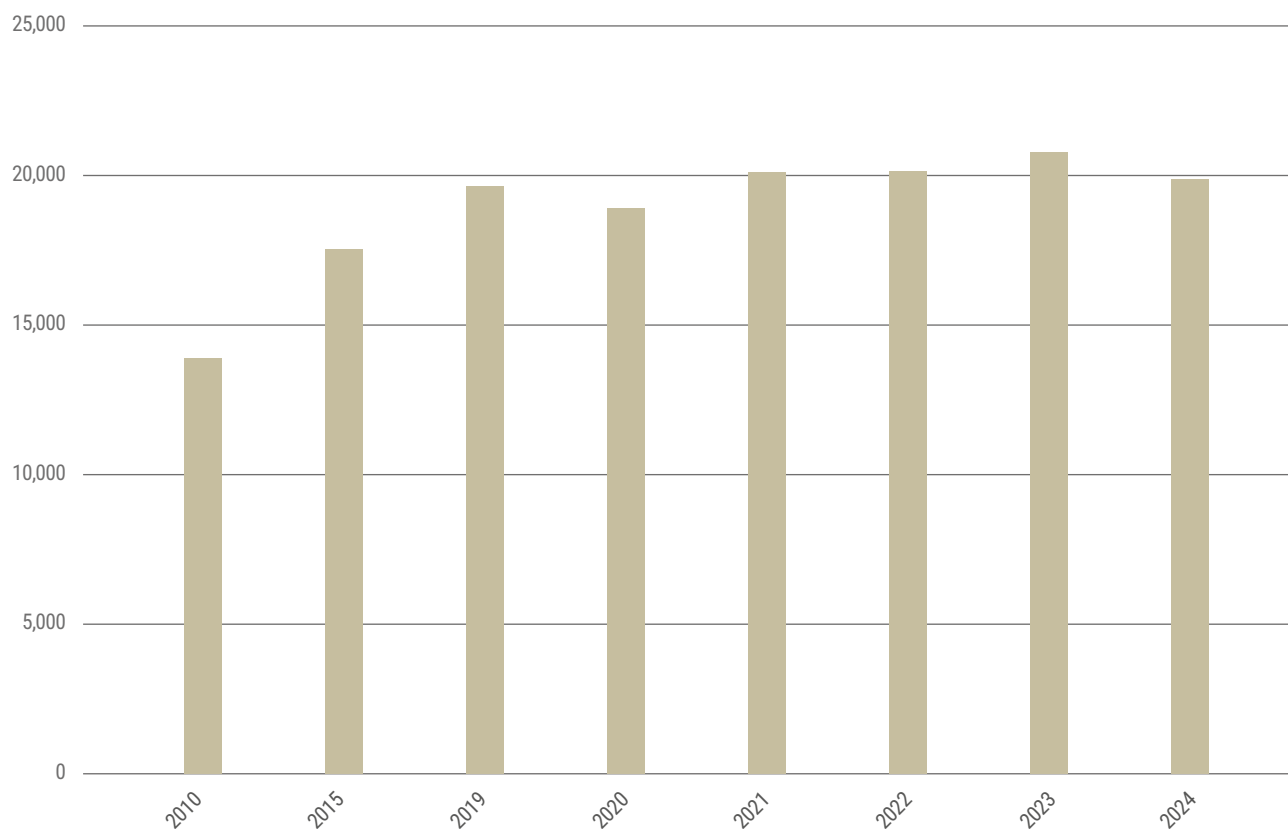


(*) Data source: U.S. Geological Survey.

Manganese - Production

World Manganese Production

(thousand metric tons)



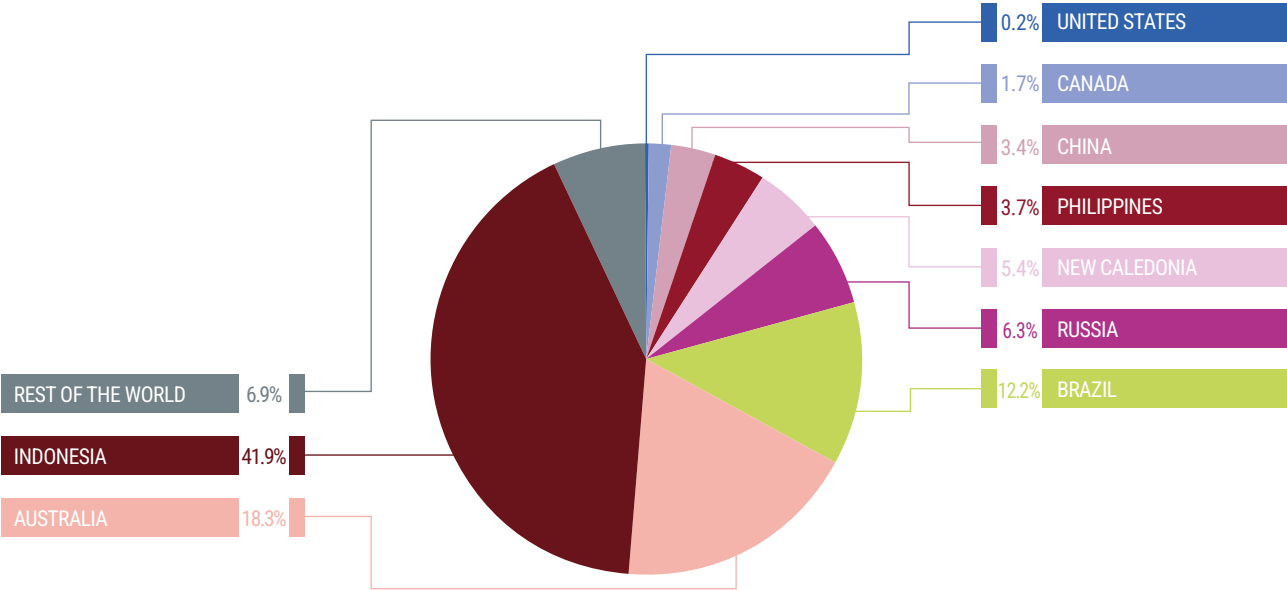
Nickel - Reserves

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	24,000,000	19,000,000	20,000,000	20,000,000	21,000,000	21,000,000	24,000,000	24,000,000
Botswana	490,000							
Brazil	8,700,000	10,000,000	11,000,000	16,000,000	16,000,000	16,000,000	16,000,000	16,000,000
Canada	3,800,000	2,900,000	2,600,000	2,800,000	2,000,000	2,200,000	2,200,000	2,200,000
China	3,000,000	3,000,000	2,800,000	2,800,000	2,800,000	2,100,000	4,200,000	4,400,000
Colombia	1,600,000	1,100,000						
Cuba	5,500,000	5,500,000	5,500,000	5,500,000				
Dominican Republic	960,000							
Guatemala		1,800,000						
Indonesia	3,900,000	4,500,000	21,000,000	21,000,000	21,000,000	21,000,000	55,000,000	55,000,000
Madagascar	1,300,000	1,600,000						
New Caledonia	7,100,000	8,400,000				7,100,000	7,100,000	7,100,000
Philippines		3,100,000	4,800,000	4,800,000	4,800,000	4,800,000	4,800,000	4,800,000
Russia	6,000,000	7,900,000	6,900,000	6,900,000	7,500,000	7,500,000	8,300,000	8,300,000
South Africa	3,700,000	3,700,000						
United States		160,000	110,000	100,000	340,000	370,000	340,000	310,000
Venezuela	490,000							
Others	4,500,000	6,500,000	14,000,000	14,000,000	20,000,000	20,000,000	9,100,000	9,100,000
World	75,040,000	79,160,000	88,710,000	93,900,000	95,440,000	102,070,000	131,040,000	131,210,000

The World Top 9 (2024)

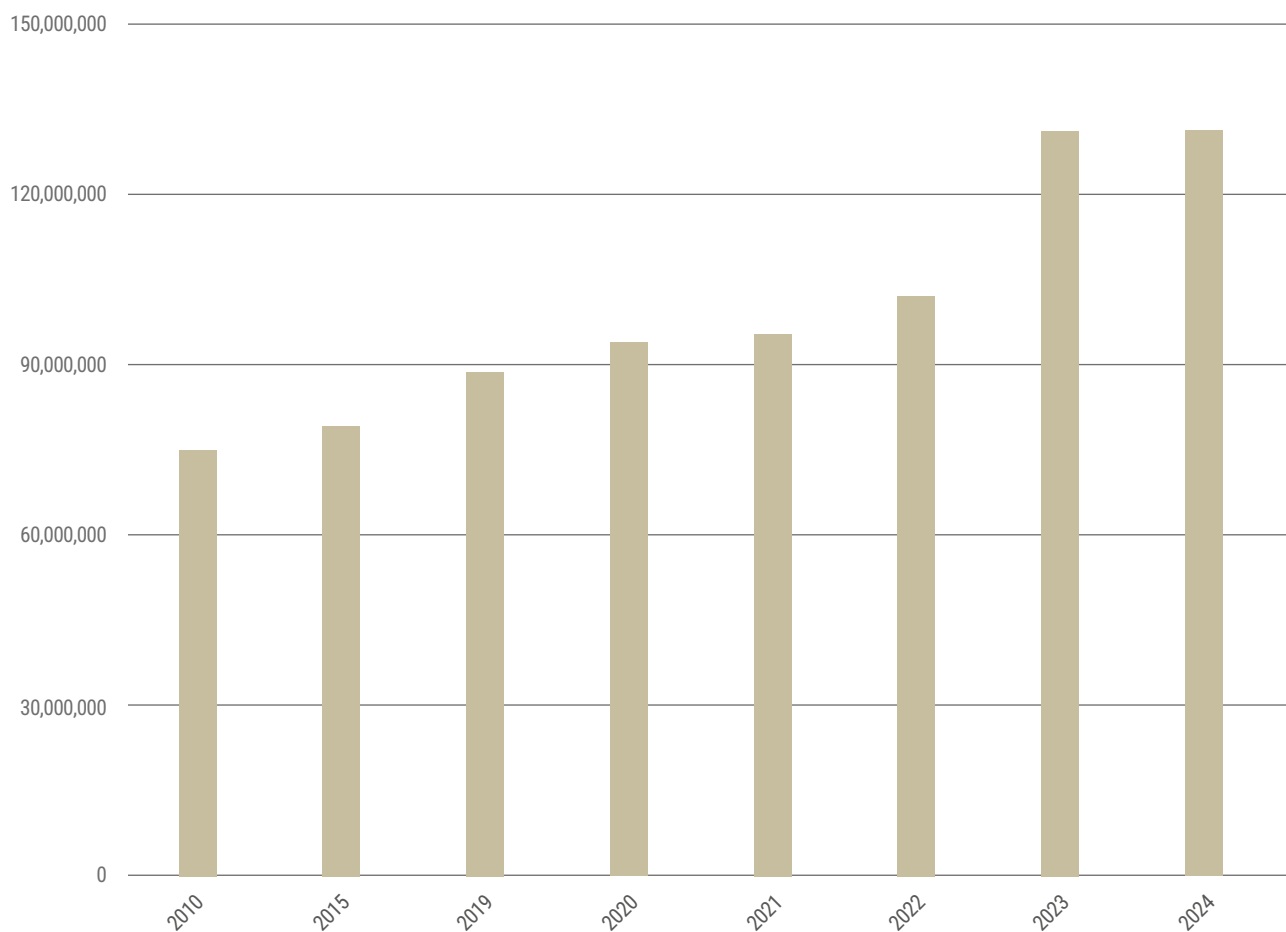


^(*) Data source: U.S. Geological Survey.

Nickel - Reserves

World Nickel Reserves

(metric tons)



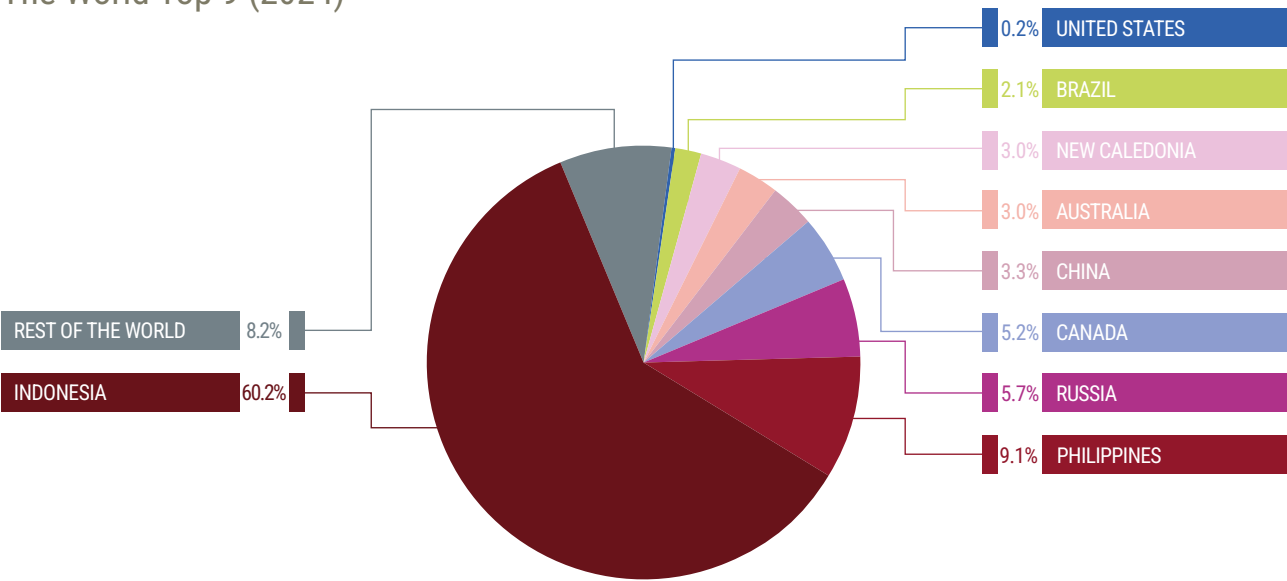
Nickel - Production

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	170,000	222,000	159,000	169,000	151,000	155,000	149,000	110,000
Botswana	28,000							
Brazil	59,100	160,000	60,600	77,100	76,000	88,500	82,700	77,000
Canada	158,000	235,000	181,000	167,000	134,000	143,000	159,000	190,000
China	79,000	92,900	120,000	120,000	109,000	114,000	117,000	120,000
Colombia	72,000	40,400						
Cuba	70,000	56,400	49,200					
Dominican Republic			56,900					
Guatemala		52,400						
Indonesia	232,000	130,000	853,000	771,000	1,040,000	1,580,000	2,030,000	2,200,000
Madagascar	15,000	45,000						
New Caledonia	130,000	186,000	208,000	200,000	186,000	200,000	231,000	110,000
Philippines	173,000	554,000	323,000	334,000	387,000	345,000	413,000	330,000
Russia	269,000	269,000	279,000	283,000	205,000	222,000	210,000	210,000
South Africa	40,000	56,700						
United States		27,200	13,500	16,700	18,400	17,500	16,400	8,000
Others	99,000	157,000	310,000	373,000	429,000	404,000	340,000	300,000
World	1,594,100	2,284,000	2,613,200	2,510,800	2,735,400	3,269,000	3,748,100	3,655,000

The World Top 9 (2024)

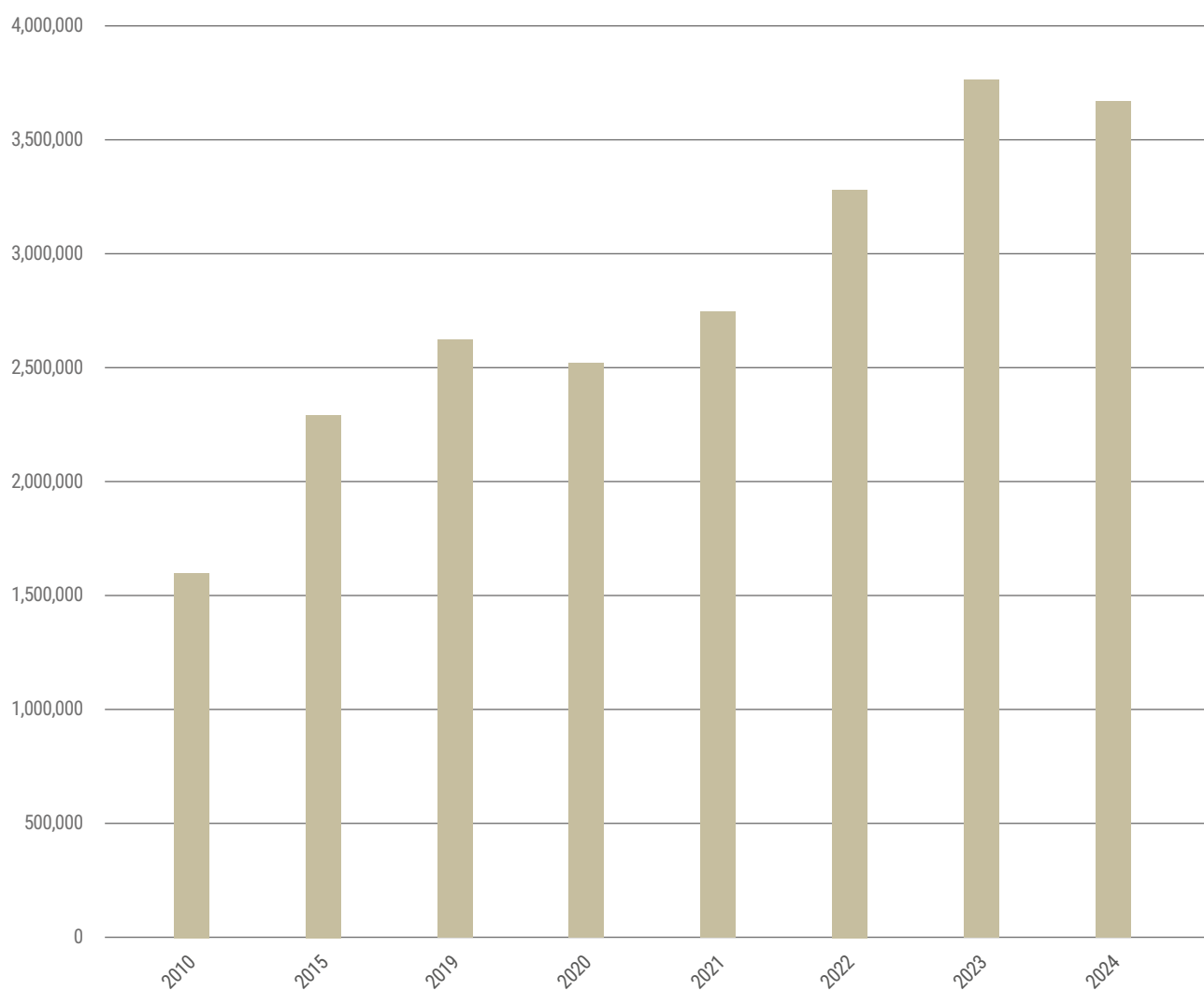


^(*) Data source: U.S. Geological Survey.

Nickel - Production

World Nickel Production

(metric tons)



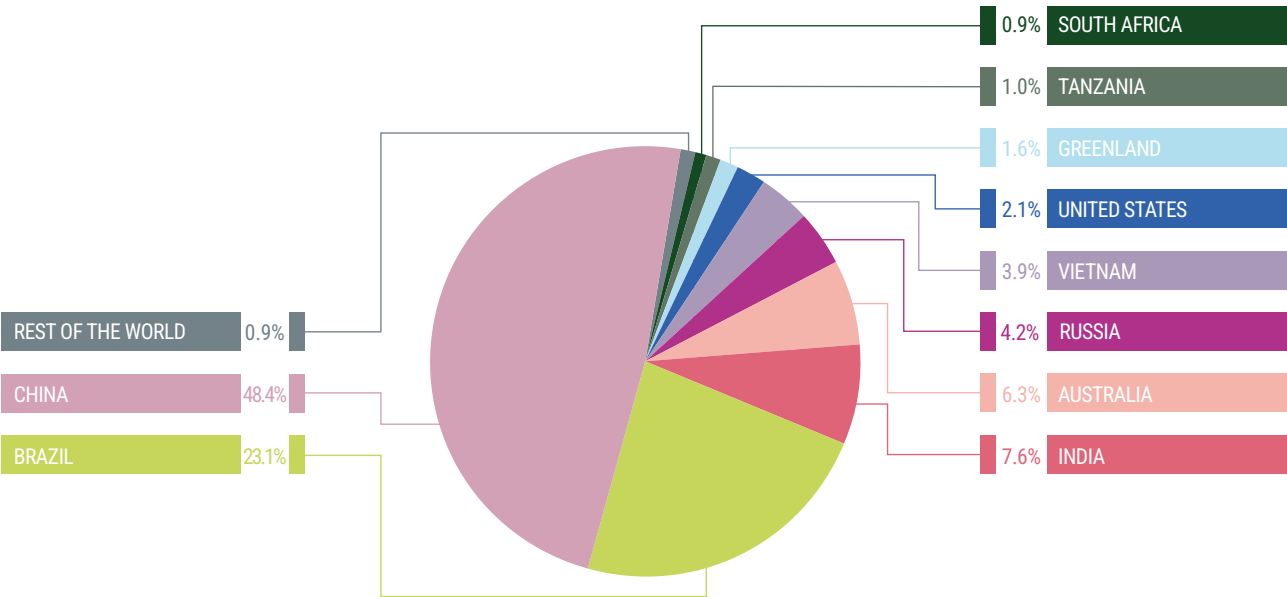
Rare Earths - Reserves

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia	1,600,000	3,200,000	3,300,000	4,100,000	4,000,000	4,200,000	5,700,000	5,700,000
Brazil	48,000	22,000,000	22,000,000	21,000,000	21,000,000	21,000,000	21,000,000	21,000,000
Canada			830,000	830,000	830,000	830,000	830,000	830,000
China	55,000,000	55,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000	44,000,000
Commonwealth of Independent States**	19,000,000							
Greenland			1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
India	3,100,000	3,100,000	6,900,000	6,900,000	6,900,000	6,900,000	6,900,000	6,900,000
Malaysia	30,000	30,000						
Russia			12,000,000	12,000,000	21,000,000	21,000,000	10,000,000	3,800,000
South Africa			790,000	790,000	790,000	790,000	790,000	860,000
Tanzania					890,000	890,000	890,000	890,000
Thailand							4,500	4,500
United States	13,000,000	1,800,000	1,400,000	1,500,000	1,800,000	2,300,000	1,800,000	1,900,000
Vietnam			22,000,000	22,000,000	22,000,000	22,000,000	22,000,000	3,500,000
Others	22,000,000	41,000,000	310,000	310,000	280,000	280,000		
World	113,778,000	126,130,000	115,030,000	114,930,000	124,990,000	125,690,000	115,414,500	90,884,500

The World Top 10 (2024)



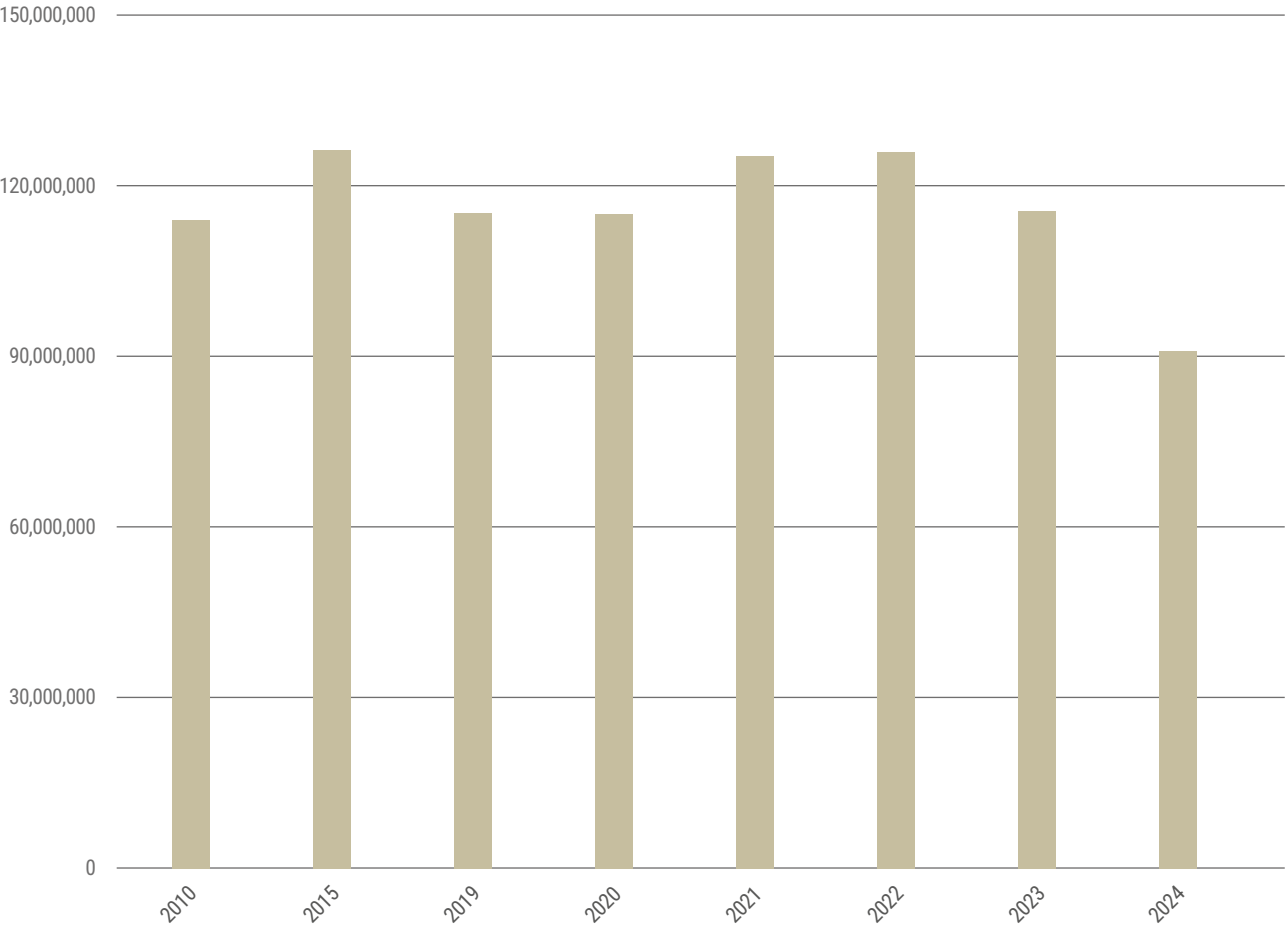
^(*) Data source: U.S. Geological Survey.

^(**) The aggregate includes the following States according to international definitions: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. However, some of these Countries may not produce rare earths.

Rare Earths - Reserves

World Rare Earths Reserves

(metric tons)



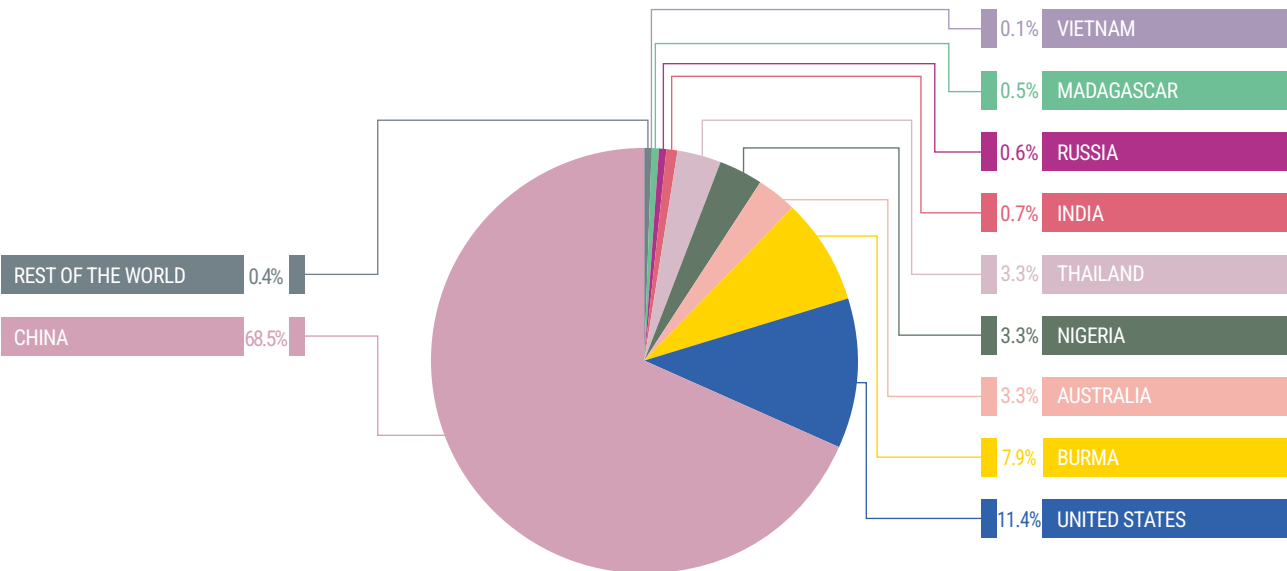
Rare Earths - Production

Countries^(*)

(metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia		12,000	20,000	21,000	24,000	18,000	16,000	13,000
Brazil	550	880	710	600	500	80	140	20
Burma						12,000	43,000	31,000
Burundi			200	300	200			
China	130,000	105,000	132,000	140,000	168,000	210,000	255,000	270,000
India	2,800	1,700	2,900	2,900	2,900	2,900	2,900	2,900
Madagascar			4,000	2,800	6,800	960	2,100	2,000
Malaysia	30	500				80	310	130
Nigeria							7,200	13,000
Russia		2,800	2,700	2,700	2,600	2,600	2,500	2,500
Thailand		760	1,900	3,600	8,200	7,100	3,600	13,000
United States		5,900	28,000	39,000	42,000	42,000	41,600	45,000
Vietnam		250	1,300	700	400	1,200	300	300
Others			66	100	60	80	1,440	1,100
World	133,380	129,790	193,776	213,700	255,660	297,000	376,090	393,950

The World Top 10 (2024)

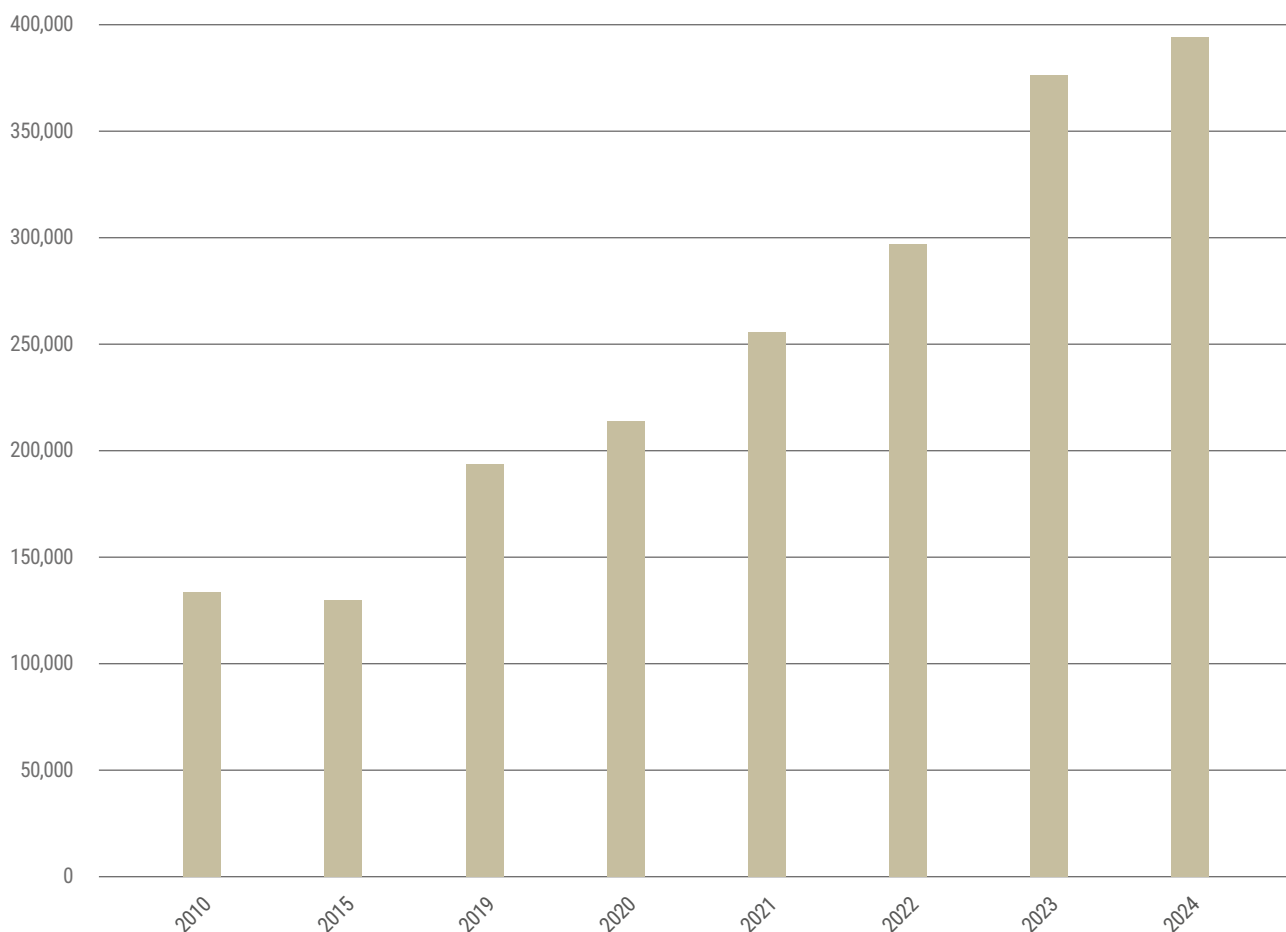


^(*) Data source: U.S. Geological Survey.

Rare Earths - Production

World Rare Earths Production

(metric tons)

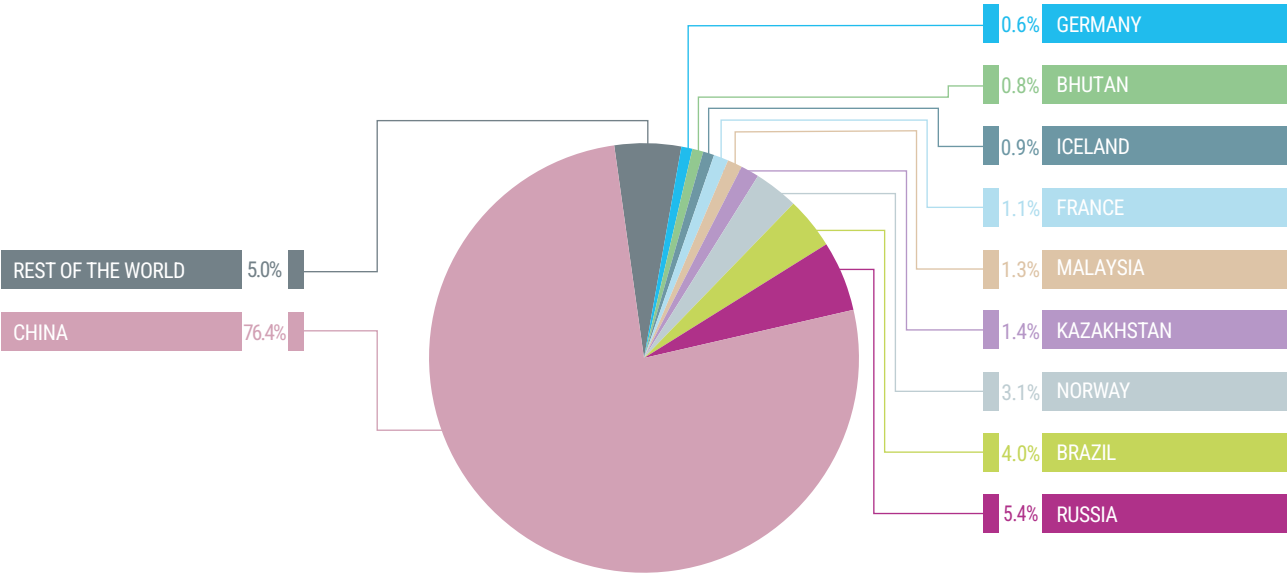


Silicon - Production

Countries(*) (thousand metric tons)

	2010	2015	2019	2020	2021	2022	2023	2024
Australia				42	50	48	39	40
Bhutan		78	90	67	85	75	82	80
Brazil	224	117	340	404	389	391	386	390
Canada	52	54	57	47	49	49	52	50
China	4,920	5,000	5,700	5,600	6,400	6,670	7,270	7,400
France	127	121	130	112	127	121	113	110
Germany					63	62	59	60
Iceland	74	75	88	103	111	128	97	90
India	66	60	60	59	59	59	59	60
Kazakhstan				67	122	101	134	137
Malaysia		68	150	109	85	91	91	130
Norway	303	375	375	345	362	339	299	300
Poland				42	49	47	33	30
Russia	643	747	610	576	644	626	527	520
South Africa	137	84	96				50	50
Spain		81	66	55	60	52	49	45
Ukraine	127	59	63	40	49	28	2	
Venezuela	50							
United States	176	411	310	277	313	310		
Others	394	300	278	175	128	223	130	208
World	7,293	7,630	8,413	8,120	9,145	9,420	9,472	9,700

The World Top 10 (2024)



(*) Data source: U.S. Geological Survey.

Silicon - Production

World Silicon Production

(thousand metric tons)

