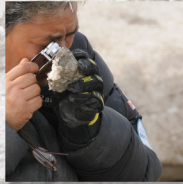




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Minerals and Metals Fact Book – 2015





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MINERALS AND METALS FACT BOOK

2015

Canada

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PREFACE

The purpose of the *Minerals and Metals Fact Book – 2015* is to provide key information related to Canada’s exploration, mining, and mineral manufacturing industries in a format that is easy to consult.

The data and information in this edition cover the 2014 calendar year. Some historical information for the period 2005-14 is also included. All data are subject to revision by statistical sources. In some instances, more than one source may be available and discrepancies in values may arise due to conceptual or methodological differences. In addition, some values may not add to totals due to rounding.

This fact book was assembled by the Industry and Economic Analysis Branch of Natural Resources Canada’s Minerals and Metals Sector (MMS) with input from subject matter experts.

You are invited to subscribe to the MMS web site at www.nrcan.gc.ca/mms-smm/subscribe to receive e-mail notification of publication releases or to contact us by e-mail at info-mms@nrcan-rncan.gc.ca for additional information or to provide feedback.

For the purposes of this publication, the following terms are defined as:

- **Exploration:** The search for, discovery, and first delimitation of a previously unknown mineral deposit or the re-evaluation of a sub-marginal or neglected mineral deposit in order to enhance its potential economic interest based on delimited tonnage, grade, and other characteristics.
- **Deposit Appraisal:** The steps undertaken to bring a delimited deposit (by definition drilling, comprehensive tests, and planning) to the stage of detailed knowledge required for an exhaustive and complete feasibility study that will fully justify and support a production decision and the investment required.
- **Senior Company:** Senior companies normally derive their income from mining or other business ventures (they need not be mining companies) rather than from the issuance of treasury shares.

- **Junior Company:** A junior company is neither a producing company (a senior company) nor the recipient of significant income from production or from some other business venture. Its principal business is exploration, for which it is raising funds through the issuance of treasury shares.
- **Mine Production:** The value of the material extracted from the mine.
- **Production:** The value of the material or recoverable metal shipped from the mine.
- **Exports:** Throughout this fact book, exports are calculated as a share of total merchandise exports and do not include services.

In addition, the **mining and mineral processing industry** comprises:

- **Mining:**
 - NAICS 212 – mining and quarrying (except oil and gas)
- **Mineral processing:**
 - NAICS 327 – nonmetallic mineral product manufacturing
 - NAICS 331 – primary metal manufacturing
 - NAICS 332 – fabricated metal product manufacturing

For select variables (i.e., nominal Gross Domestic Product and employment), additional industry data are available for **mining-related support activities**, which comprises:

- **Mining-related support activities:**
 - NAICS 213117 – contract drilling (except oil and gas)
 - NAICS 213119 – other support activities for mining

In these instances, aggregated totals include mining, mineral processing, and mining-related support activities.

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Introduction

Canada's minerals and metals sector, which comprises mining, mining-related support activities, and mineral processing, is a mainstay of the national economy that supports jobs and economic activity in every region. In 2014, it directly employed nearly 380,000 Canadians and accounted for 18% of exports and 3.4% of the country's Gross Domestic Product (GDP).

Canada produced some 60 minerals and metals at over 200 active mines, worth nearly \$45 billion, in 2014. It is the world's leader in the production of potash and a major global producer of key commodities such as primary aluminum,¹ cobalt, diamonds, gold, nickel, niobium, platinum group metals, salt, titanium concentrate, tungsten, and uranium.

Internationally, Canada is recognized as a global mining giant. The Toronto Stock Exchange (TSX) and TSX Venture Exchange (TSX-V) are home to almost 60% of the world's publicly listed mining and exploration companies and typically raise one-third to one-half of all global mining equity. Canada remained the world's top destination for mineral exploration investment in 2014, attracting 14% of all global exploration budgets, while Canadian-based companies accounted for over 30% of global exploration budgets. In 2013, Canadian-based companies had total mining assets of \$234 billion, of which over \$153 billion was located in more than 100 foreign countries.

¹ Canada accounts for a significant amount of the global production of primary aluminum, but does not host a domestic source of bauxite, an ore that is first processed into alumina and then into aluminum. Thus, Canadian-based operators must import 100% of this commodity to supply their smelters.

Key Facts and Figures

- **Nominal GDP:** In 2014, the GDP of mining, mining-related support activities, and mineral processing was **\$66.9 billion**, which represented **3.6%** of Canada's total GDP.
- **Employment:** In 2014, the mining, mining-related support activities, and mineral processing industry employed nearly **380,000** individuals:
 - mining and quarrying (except oil and gas) – 63,590
 - mining-related support activities sector – 27,700
 - primary metal manufacturing – 69,625
 - nonmetallic mineral product manufacturing – 53,110
 - fabricated metal product manufacturing – 162,430
- **Capital Expenditures:** In 2014, the mining and mineral processing industries invested **\$15.3 billion** in new capital construction and in machinery and equipment, accounting for **6.1%** of the Canadian total.
- **Exports:** Valued at **\$88.8 billion** in 2014, Canada's mineral exports, which include ores, concentrates, and semi- and final-fabricated metal products, accounted for **18.1%** of Canada's total domestic exports.
- **Balance of Trade:** In 2014, Canada's mineral exports, which include ores, concentrates, and semi- and final-fabricated mineral products, had a balance of trade of **+\$13.6 billion**.
- **Shipping:** Mining and mineral processing products traditionally account for **over half** of railway shipping and for **around half** of marine shipping.
- **Stock Exchanges:** The Toronto Stock Exchange (TSX) and TSX Venture Exchange (TSX-V) list the most mining companies in the world. Close to **60% (nearly 1,500 companies)** of the world's publicly listed mining and exploration companies are listed on the TSX or TSX-V, including a number of global mining leaders.
- **Financing:** Canada ranked first in equity financing raised for mining and mineral exploration, with over **60% (\$8.9 billion)** of the world's equity financing raised by companies listed on the TSX or TSX-Venture stock exchanges in 2014.

- **Taxes and Royalties:** Between 2009 and 2013, the mining and select manufacturing sectors (mining and quarrying, primary metal manufacturing and nonmetallic mineral product manufacturing) have paid annually, on average, **\$3.2 billion** in corporate taxes and royalties.
- **Mining Assets Abroad:**² Canadian exploration and mining companies have mining assets abroad worth over **\$153 billion** invested in **4,000 properties** in **over 100 countries** (2013).
- **Aboriginal Employment:** The mining and mineral processing industry is an important employer of Aboriginal people, providing jobs to over 10,000 individuals, mostly in upstream activities such as mining and quarrying.
- **Aboriginal Representation:** Aboriginal people accounted for approximately 8% of the mining and quarrying industry's labour force in 2011, more than double the all-industry average representation of 3.4%.
- **Aboriginal Communities:** Within the last decade (2005-14), approximately 290 separate agreements (e.g., Impact and Benefit Agreements, Memoranda of Understanding, Exploration Agreements) have been signed, accounting for three-quarters of all agreements (an estimated 386 signed since 1974).
- **Service Suppliers:** **Over 3,000 Canadian firms** were available to provide technical, legal, financial, accounting, environmental, and other expertise to the mining and exploration industry.

² Canadian mining asset values are those reported in company financial reports, nearest to December 31, 2013, for public companies headquartered in Canada that are not under foreign control. Mining assets, in this context, reflect non-current assets, including mineral properties, deferred mineral exploration expenses, royalties, investments in non-Canadian mining companies, and other non-current assets related to mining that can be reconciled to a specific geographic location. Canadian mining assets include values for all countries while Canadian mining assets abroad include values for all countries but Canada.

Mineral Production

- Canada is one of the world's largest producers of minerals and metals with over **60 commodities** produced at more than **200 principal producing mines** and more than **3,000 stone quarries and gravel pits**.
- The total value of Canada's mineral production was nearly **\$45 billion** in 2014.
- **Gold was the top-ranked commodity** (by value) produced in Canada in 2014 at \$6.8 billion. Potash (\$5.9 billion) and copper (\$5.2 billion) were the next most valuable commodities.
- Canada continues to be the **global leader in the production (by volume) of potash** and ranks among the top five global producers for primary aluminum,³ cobalt, diamonds, gold, nickel, niobium, platinum group metals, salt, sulphur (elemental), titanium concentrates, tungsten, and uranium.

MAP 900A – PRINCIPAL MINERAL AREAS OF CANADA

This map is produced and published annually by Natural Resources Canada. It contains a variety of statistics on Canada's mineral production and provides the geographic locations of significant metallic, nonmetallic, and industrial mineral mines; oil sands mines; and gas fields for the provinces and territories of Canada.

An interactive version of Map 900A and an electronic version are available for viewing or downloading on Natural Resources Canada's web site at www.nrcan.gc.ca/mining-materials/publications/8790. If you wish to request a printed copy, please contact us by e-mail at info-mms@nrcan-rncan.gc.ca.

³ Canada accounts for a significant amount of the global production of primary aluminum, but does not host a domestic source of bauxite, an ore that is first processed into alumina and then into aluminum. Thus, Canadian-based operators must import 100% of this commodity to supply their smelters.

Table 1. Canada's Mineral Production, by Commodity Group, 2013 and 2014 (p)

Commodity Group	2013	2014 (p)	Change
	(\$ billions)		(%)
Metals	23.5	24.6	4.7
Nonmetals	15.5	16.2	4.9
Total non-fuels	39.0	40.8	4.5
Coal	4.9	3.9	-19.9
Total production	43.9	44.7	2.0

Sources: Natural Resources Canada; Statistics Canada.

(p) Preliminary.

Table 2. Canada's Leading Minerals, by Value of Production, 2014 (p)

Mineral	Production Value
	(\$ billions)
Gold	6.83
Potash (1)	5.87
Copper	5.22
Iron ore	4.40
Nickel	4.07
Coal	3.91
Diamonds	2.23
Sand and gravel (2)	1.98
Cement (3)	1.72
Stone (2)	1.51
Platinum group metals	0.98
Uranium (4)	0.93

Sources: Natural Resources Canada; Statistics Canada.

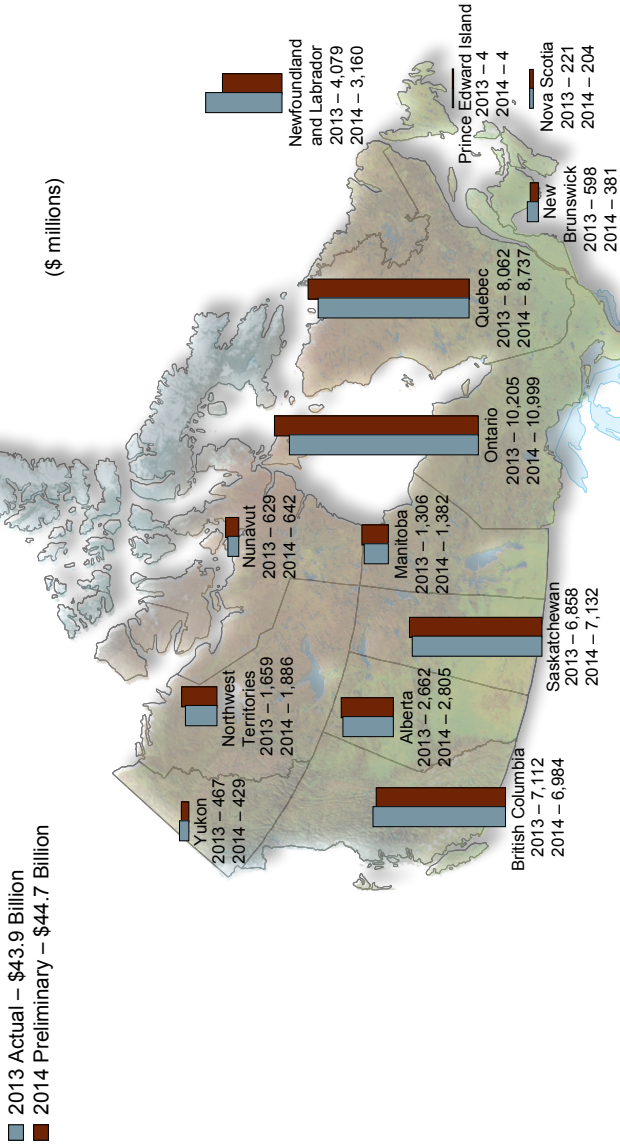
(p) Preliminary.

(1) Excludes shipments to potassium sulphate plants. (2) Excludes shipments of sand, gravel, and stone to Canadian cement, lime, and clay plants. (3) Includes exported clinker. (4) The uranium value was calculated using spot market prices.

Figure 1. Canadian Mineral Production, 2013 and 2014 (p)

\$45 BILLION IN MINERAL PRODUCTION (2014)

Canadian production of metallic and nonmetallic minerals and coal (excluding oil sands), 2014 preliminary.



Sources: Natural Resources Canada; Statistics Canada.

(M) Million; (p) Preliminary.

Mineral Exploration and Deposit Appraisal

- Preliminary figures for 2014 indicate that mining and mineral exploration companies spent **\$1.93 billion** on exploration and deposit appraisal projects in Canada, a notable decline from \$2.4 billion in 2013. Revised spending intentions for 2015 indicate a further, but more modest, decline to **\$1.87 billion**.
- Canada is known for its large contingent of junior mining companies that have no internally generated revenue (e.g., do not have an operating mine) and rely on markets to raise the capital necessary to conduct their exploration programs.
- In 2014, junior mining companies spent **\$0.7 billion** on exploration and deposit appraisal activities, a 23% decline from 2013, due to continued difficult economic and financial conditions throughout the year.
- Precious metals, particularly gold, remained the leading target for exploration spending (**\$828.0 million**), accounting for 43% of total spending.
- According to SNL Metals and Mining:
 - Canadian-headquartered mining and exploration companies accounted for the largest portion of worldwide nonferrous exploration budgets, reaching **30%** in 2014.
 - Canada remained the world's top destination for nonferrous mineral exploration in 2014, attracting **14%** of budgeted exploration expenditures.

Table 3. Exploration and Deposit Appraisal Expenditures, by Company Class, 2005-15 (si)

Year	Senior Companies	Junior Companies
	(2014 \$ millions)	
2005	603.9	961.0
2006	786.1	1,445.0
2007	1,047.8	2,153.8
2008	1,264.5	2,305.3
2009	927.2	1,235.2
2010	1,327.0	1,675.6
2011	2,284.7	2,146.4
2012	2,094.8	1,907.7
2013	1,414.7	981.9
2014 (p)	1,191.2	742.5
2015 (si)	1,106.8	760.5

Source: Natural Resources Canada, based on the annual Survey of Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(p) Preliminary; (si) Spending intentions.

Table 4. Exploration and Deposit Appraisal Expenditures, by Mineral Commodity Group, 2005-15 (si)

Year	Precious Metals	Base Metals	Iron Ore	Uranium	Diamonds	Other Metals	Nonmetals	Coal
	(2014 \$ millions)							
2005	642.3	364.1	30.4	109.4	287.4	60.3	20.8	50.3
2006	845.8	480.8	76.0	249.3	399.2	99.9	20.2	59.9
2007	1,159.5	804.7	134.2	467.4	363.7	198.2	35.2	38.6
2008	1,264.3	916.7	244.3	445.2	241.2	206.4	195.2	56.5
2009	1,100.2	329.9	68.3	228.0	77.8	110.2	184.5	63.5
2010	1,564.2	597.9	119.2	206.3	115.7	153.6	182.9	63.0
2011	2,387.0	769.5	321.8	207.2	96.3	273.3	224.5	151.5
2012	1,903.3	653.8	370.3	211.9	77.1	238.5	323.9	223.8
2013	1,124.5	427.2	133.2	170.5	74.3	195.5	118.7	152.7
2014 (p)	826.0	416.8	67.2	178.9	97.1	108.6	118.2	120.9
2015 (si)	707.7	414.7	88.1	164.9	66.7	53.9	247.4	123.9

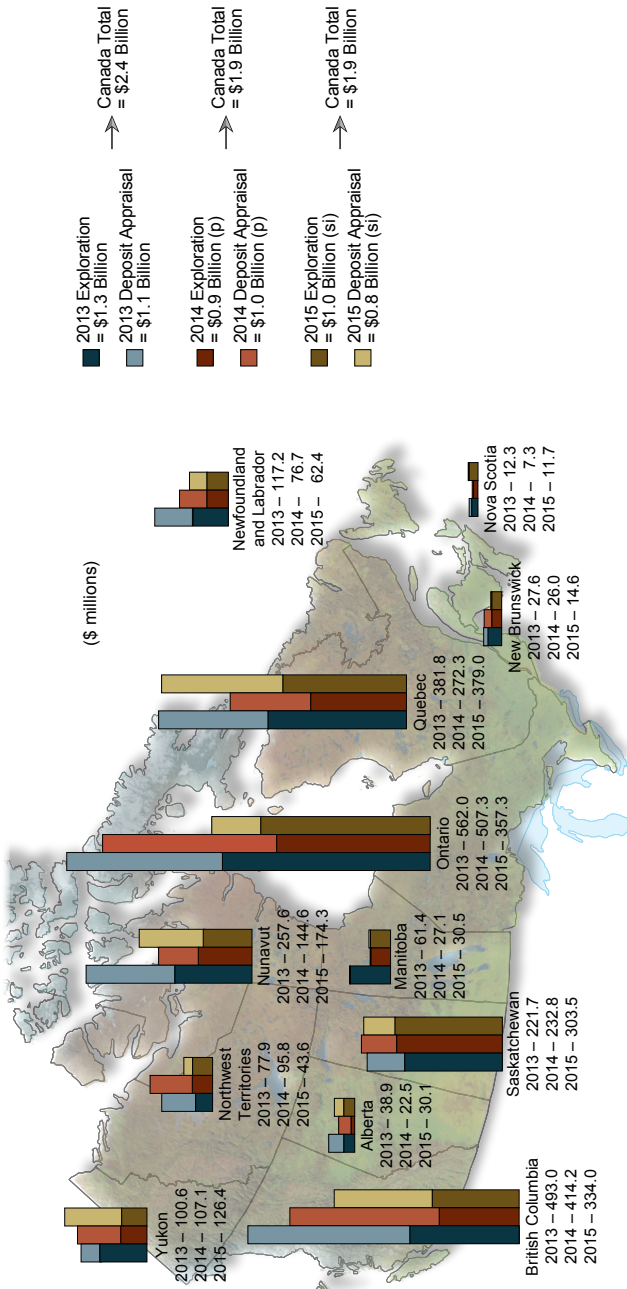
Source: Natural Resources Canada, based on the annual Survey of Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(p) Preliminary; (si) Spending intentions.

Notes: "Precious metals" include gold, silver, and platinum group metals (iridium, osmium, palladium, platinum, rhodium, and ruthenium).

"Base metals" refer to nonferrous metals such as copper, lead, nickel, and zinc. "Other metals" refers to all other metals not captured under the precious metals, base metals, uranium, and iron ore categories.

Figure 2. Exploration and Deposit Appraisal Expenditures in Canada, 2013-15 (si)



Source: Natural Resources Canada, based on the annual Survey of Exploration, Deposit Appraisal and Mine Complex Development Expenditures.

(p) Preliminary; (si) Spending intentions.

Notes: Exploration and deposit appraisal activities include all activities carried out to search for, discover, characterize, and define in detail a mineral deposit for the pre-feasibility and final feasibility studies that will support a production decision and the investment required. Expenditures include on-mine-site and off-mine-site activities, field work, overhead costs, engineering, economic and pre-production or production feasibility studies, environment, and land access costs.

Canadian Mining Assets

- Canadian mining assets (CMA)⁴ totaled **\$233.9 billion** in 2013, a 5% increase from the revised 2012 value of \$222.6 billion.
- Canadian mining assets abroad (CMAA) totaled **\$153.2 billion**, up from the revised 2012 value of \$146.5 billion.
- CMAA as a percentage of CMA remained stable at **66%** for both years.
- Almost every region experienced growth in 2013 with the exception of Oceania. Europe experienced the greatest growth in percentage terms while Latin America was first in dollar terms.
- Canadian mining and exploration companies were present in **107 foreign countries** in 2013. The top five destinations by CMAA value were all in the Americas: Chile (\$20.6 billion), the United States (\$19.7 billion), Mexico (\$19.0 billion), Argentina (\$14.3 billion), and Brazil (\$8.1 billion).
- The top 10 companies by value for 2013 accounted for **63%** of total CMA and **73%** of the net year-over-year increase, with a cumulative value of **\$147 billion**.

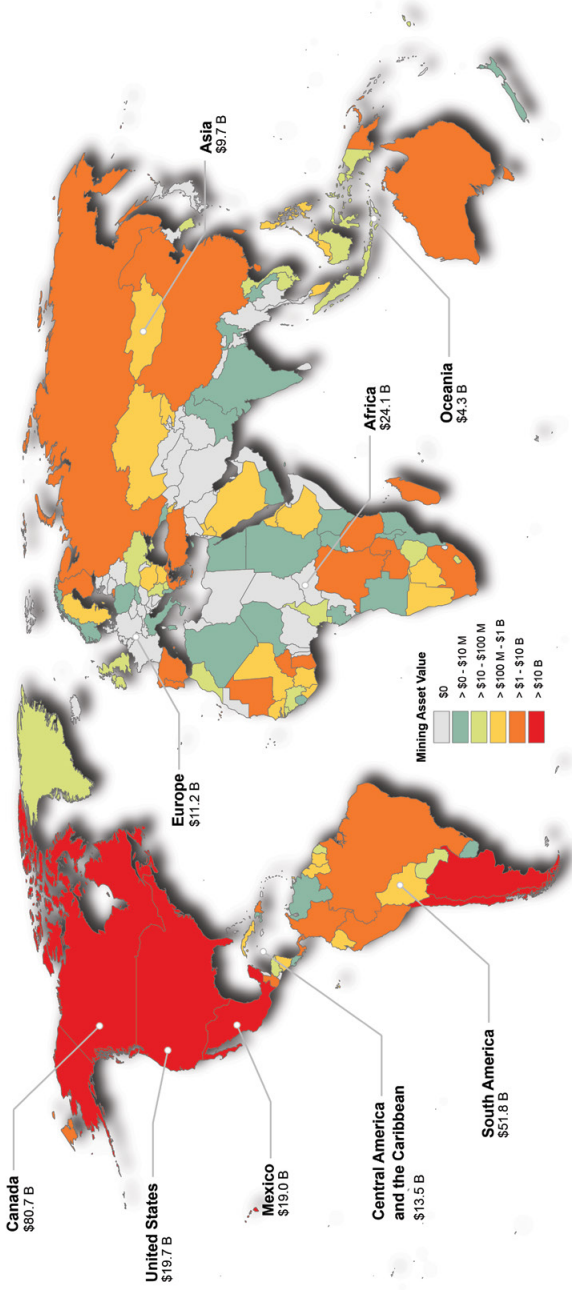
⁴ Canadian mining asset values are those reported in company financial reports, nearest to December 31, 2013, for public companies headquartered in Canada that are not under foreign control. Mining assets, in this context, reflect non-current assets, including mineral properties, deferred mineral exploration expenses, royalties, investments in non-Canadian mining companies, and other non-current assets related to mining that can be reconciled to a specific geographic location. CMA include values for all countries while CMAA include values for all countries but Canada.

Table 5. Canadian Mining Assets by Region, 2012 (r) and 2013

	2012 (r)	2013	Variation (\$ billions)	Variation (%)
	(\$ billions)			
Africa	22.4	24.1	1.8	7.8
Americas (excluding Canada)	99.8	103.9	4.2	4.2
Asia	9.2	9.7	0.4	4.7
Europe	9.7	11.2	1.5	15.1
Oceania	5.5	4.3	-1.1	-20.2
Canadian mining assets abroad	146.5	153.2	6.7	4.6
Canada	76.1	80.7	4.6	6.0
Total Canadian mining assets	222.6	233.9	11.3	5.1

Source: Natural Resources Canada.
(r) Revised.

Figure 3. Canadian Mining Assets, by Region, 2013



Source: Natural Resources Canada.
(B) Billion; (M) Million.

Aboriginal Peoples' Participation in the Minerals and Metals Sector

EMPLOYMENT⁵

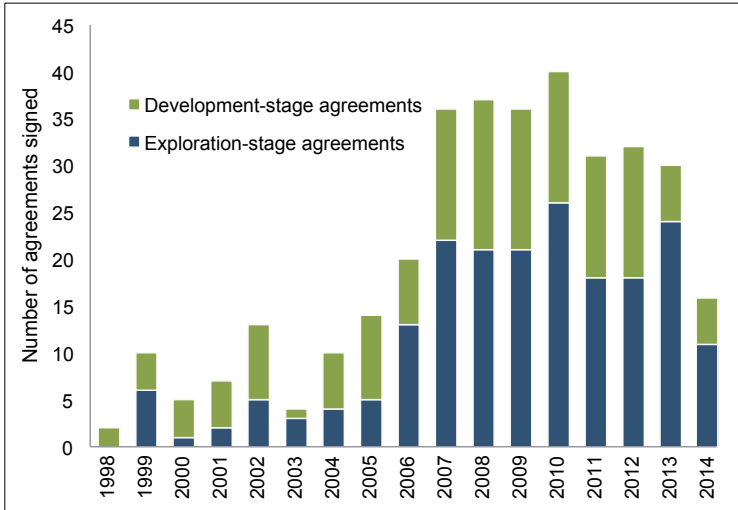
- About 30,000 Aboriginal people living off reserves are directly employed in Canada's natural resources sector. Of this total, about 10,000 are employed in the minerals and metals sector.

AGREEMENTS BETWEEN MINING COMPANIES AND ABORIGINAL COMMUNITIES OR GOVERNMENTS

- An estimated 386 agreements (Impact and Benefit Agreements or agreements at the exploration stage) have been signed since 1974 for 231 different mining projects.
- A total of 348 agreements were signed between 1998 and 2014, compared to 38 before 1998. The increase can be attributed to a higher level of mining activity and a growing focus on building a mutual understanding between a community and a company. Agreements have helped secure benefits for local Aboriginal communities and businesses, and certainty for exploration and mining companies.
- Approximately 300 of these agreements are still active across Canada.
- Exploration-stage agreements, as a share of all agreements between mining companies and Aboriginal people or governments, have increased from 8.1% of all agreements signed before 1998 to 58.3% of all agreements signed between 1998 and 2014.

⁵ The Aboriginal employment numbers presented in this section are from Statistics Canada's 2014 Labour Force Survey (LFS). The LFS excludes persons living on reserves and settlements. Although the LFS produces employment estimates for the territories, it uses a different methodology than the one used for the provinces and does not provide estimates at the industry level required for this report. Consequently, the data included in this section are incomplete and may underestimate the number of Aboriginal people employed in the mining sector.

Figure 4. Number of Agreements Signed Between Mining Companies and Aboriginal Communities or Governments, 1998-2014



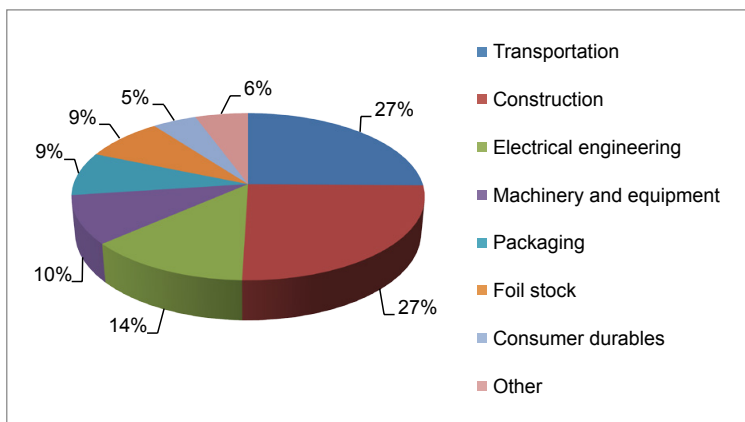
Source: Natural Resources Canada.

Aluminum

USES

- Light, strong, flexible, non-corrosive, and infinitely recyclable, aluminum is one of the most widely used metals in the world.
- Because of its lightness and durability, aluminum is widely used in all segments of the transportation industry. The use of aluminum in vehicle production can aid manufacturers' needs to meet new fuel-efficiency standards with lighter vehicles.
- Aluminum is also commonly used in packaging (e.g., beverage cans, foils).
- The construction industry relies on a variety of aluminum alloys in the manufacture of products ranging from exterior siding to structural components.
- Aluminum's ability to conduct heat and electricity also make it a popular choice in the electrical and electronics industries.

Figure 1. Aluminum Global Uses, 2013



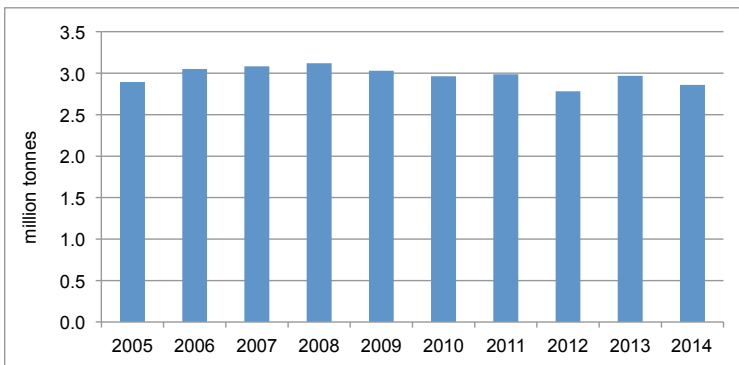
Source: Statistica.com.

Note: Percentages may not add to 100 due to rounding.

CANADIAN PRODUCTION

- In nature, aluminum does not naturally exist in a pure state. The production of primary aluminum metal commences with bauxite ore, which is composed of hydrated aluminum oxide (40-60%) mixed with silica and iron oxide. Roughly 4-5 tonnes (t) of bauxite ore are refined to produce approximately 2 t of alumina. This 2 t of alumina is smelted to produce approximately 1 t of aluminum.
- Once produced, aluminum is readily recycled.
- Canada imported roughly 3.8 million tonnes (Mt) of bauxite ore in 2014 that was refined into alumina at Rio Tinto Alcan’s Quebec-based Jonquière refinery. This alumina was then further smelted into aluminum.
- Canada also directly imported approximately 4.0 Mt of alumina in 2014 that was, as well, smelted into aluminum.
- There are 11 primary aluminum smelters in Canada: 1 is located at Kitimat, British Columbia, and the other 10 are in Quebec.
- Canada is the world’s third-largest primary aluminum producer after China and Russia.
- Canada produced an estimated 2.9 Mt of primary aluminum in 2014, a decrease of 109,100 t from 2013.

Figure 2. Canadian Production of Primary Aluminum, 2005-14



Sources: Natural Resources Canada.

Table 1. Canadian Refinery and Smelters, Estimated Capacity, 2014

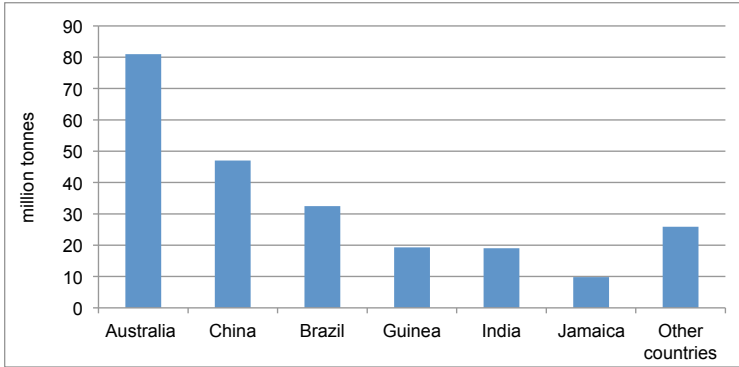
Company	Location	Ownership	Capacity (tonnes)
ALUMINA REFINERY			
Rio Tinto Alcan	Jonquière, Quebec (Vaudreuil)	100%	1,555,000
ALUMINIUM SMELTERS			
Rio Tinto Alcan	Kitimat, British Columbia	100%	127,000
Rio Tinto Alcan	Saguenay-Lac-Saint-Jean, Quebec (Grand-Baie)	100%	225,000
Rio Tinto Alcan	Saguenay-Lac-Saint-Jean, Quebec (Arvida)	100%	176,000
Rio Tinto Alcan	Saguenay-Lac-Saint-Jean, Quebec (Alma)	100%	455,000
Rio Tinto Alcan	Saguenay-Lac-Saint-Jean, Quebec (Arvida AP60)	100%	60,000
Rio Tinto Alcan	Saguenay-Lac-Saint-Jean, Quebec (Laterrière)	100%	244,000
Alcoa	Baie-Comeau, Quebec	100%	385,000
Alcoa	Deschambault, Quebec	100%	295,000
Rio Tinto Alcan	Sept-Îles, Quebec (Alouette)	Rio Tinto Alcan, 40%; AMAG, 20%; Norsk Hydro, 20%; Investissement Québec, 6.67%; Marubeni, 13.33%	595,000
Alcoa/Rio Tinto Alcan	Bécancour, Quebec	Alcoa, 74.95%; Rio Tinto Alcan, 25.05%	446,000
Total smelting capacity			3,008,000

Sources: Natural Resources Canada; company web sites.

WORLD PRODUCTION

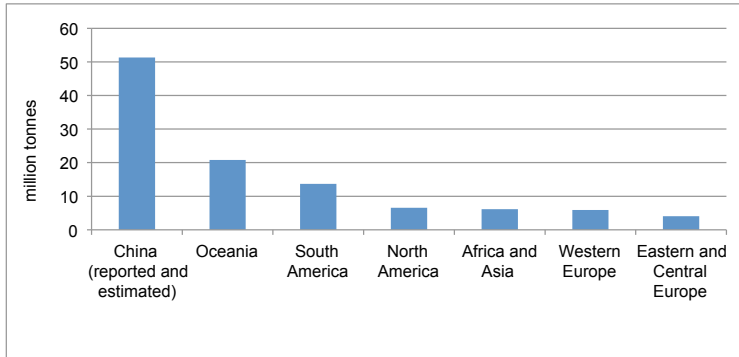
- World primary aluminum production totaled 53.0 Mt in 2014.
- China was the world’s largest producer with 27.5 Mt.

Figure 3. World Production of Bauxite Ore, by Country, 2014



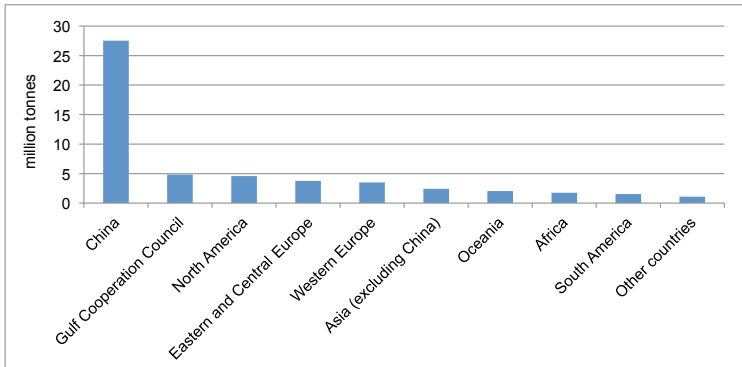
Source: U.S. Geological Survey.

Figure 4. World Production of Alumina, by Region, 2014



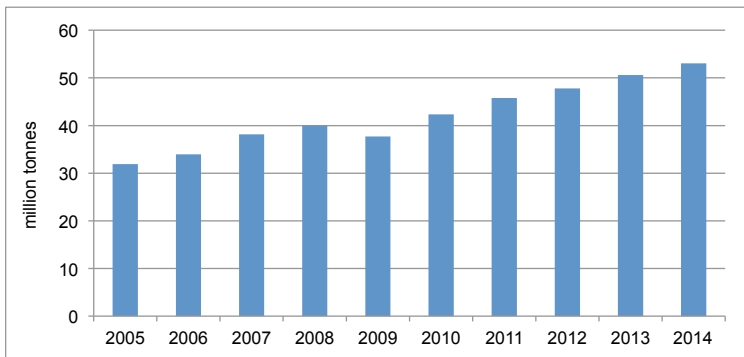
Source: International Aluminium Institute.

Figure 5. World Production of Primary Aluminum, by Region, 2014



Source: International Aluminium Institute.

Figure 6. World Production of Primary Aluminum, 2005-14

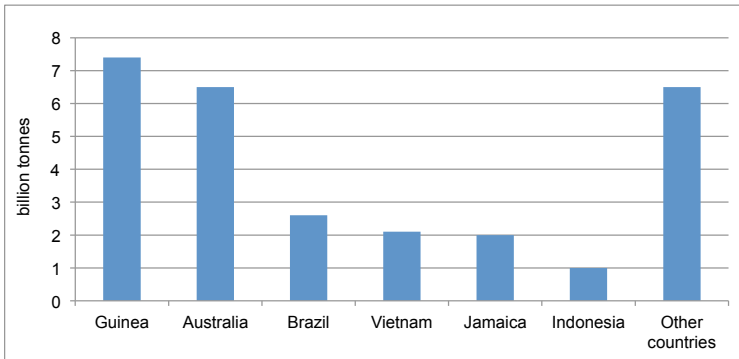


Source: International Aluminium Institute.

WORLD RESERVES

- In 2014, global reserves of bauxite ore were assessed at 28.0 billion t.
- Guinea ranked first with 7.4 billion t, or 26.4%.
- Australia was second with 6.5 billion t, or 23.2%.
- Brazil was third with 2.6 billion t, or 9.3%.

Figure 7. World Reserves of Bauxite Ore, by Country, 2014



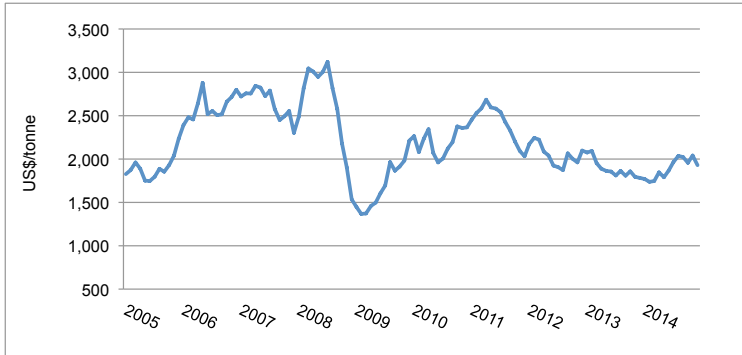
Source: U.S. Geological Survey.

TRADE

- Canada's global trade in aluminum products was valued at \$12.9 billion in 2014.
- Canadian exports of aluminum products were valued at \$8.2 billion in 2014, a 6.8% decrease over 2013. Of this amount, \$6.4 billion comprised unwrought alloyed and non-alloyed aluminum, \$930 million comprised aluminum waste and scrap, and \$873 million comprised semi-fabricated and fabricated aluminum products.
- The United States was Canada's largest export destination for aluminum products at all production stages, accounting for 82% of total export trade, followed by the Netherlands (3.8%), Mexico (2.8%), China (2.7%), and South Korea (2.1%).
- Canada's total imports of aluminum products were valued at \$4.8 billion, of which \$2.7 billion comprised semi-fabricated and fabricated aluminum products, \$130 million was bauxite (3.5 Mt) arising principally from Brazil and Guinea, and \$1.3 billion was alumina (4.0 Mt) arising principally from Brazil, Jamaica, the United States, and Suriname.

PRICES

Figure 8. Aluminum Prices, Three-Month Official Average, 2005-14



Source: London Metal Exchange.

RECYCLING

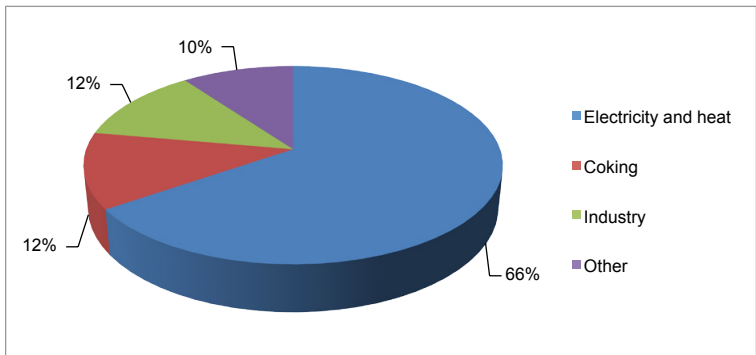
- Aluminum is infinitely recyclable, making it one of the most recycled metals in the world.
- While global demand requires production from both recycled and primary sources, aluminum produced using recycled materials can save as much as 95% of the energy that is required to produce aluminum from bauxite ore.

Coal

USES

- Coal is used for electricity generation, steelmaking, and various industrial and residential applications.
- The main use of coal is electricity generation (coal-fired generation). The coal used for this purpose is referred to as thermal coal. In 2012, electricity generation accounted for 66% of total global coal usage.
- Coal is a key ingredient in the manufacturing of steel. The coal used for this purpose is referred to as metallurgical coal, coking coal, or steelmaking coal. In 2012, steel manufacturing accounted for 12% of total global coal usage.
- Coal is also used in a number of other industrial applications, including cement production. These other industrial uses accounted for 12% of total global coal usage in 2012.
- Other uses, including residential and non-energy uses, accounted for 10% of total global coal usage.

Figure 1. Coal, Global Uses, 2012

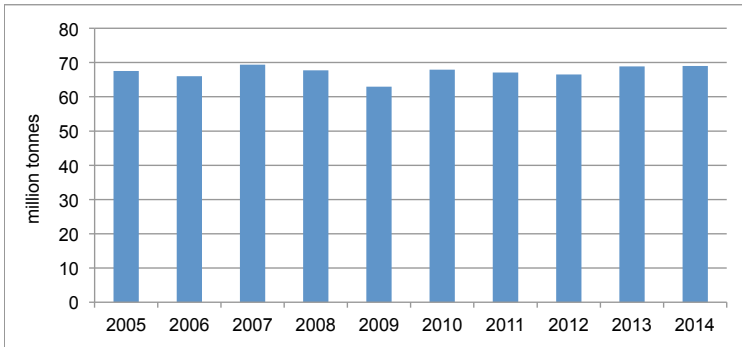


Source: International Energy Agency, *Coal Information 2014*.

CANADIAN PRODUCTION

- In 2014, Canadian mines produced 69 million tonnes (Mt) of coal, a slight increase from 68.9 Mt in 2013.
- The increase can be attributed to higher production of subbituminous coal, which rose to 25 Mt in 2014 from 21.7 Mt in 2013.
- Metallurgical (coking or steelmaking) coal production declined due to weak global demand, which resulted in production suspension at some mines.

Figure 2. Canadian Coal Production, 2005-14

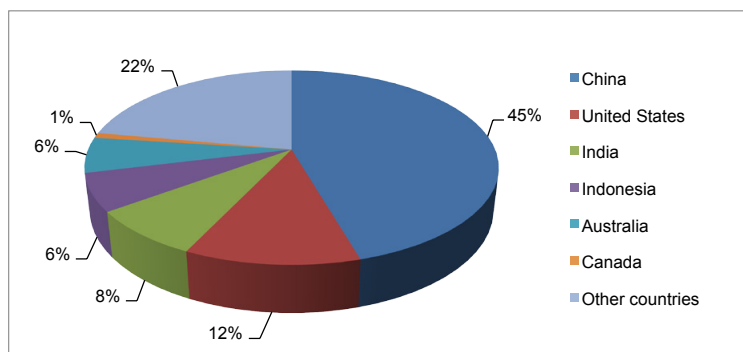


Sources: Statistics Canada; Natural Resources Canada.

WORLD PRODUCTION

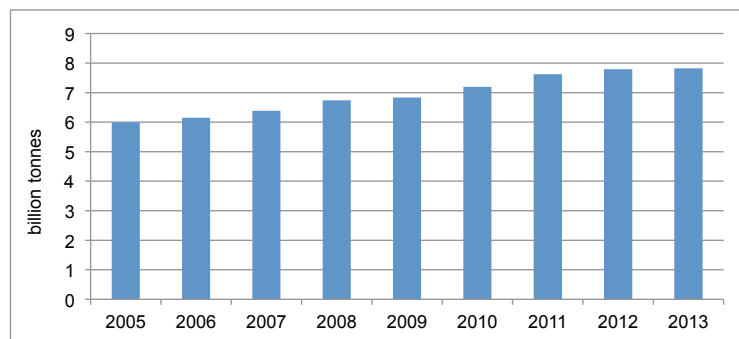
- In 2013, China was the world's largest producer of coal, accounting for 45% of total world production.
- The top 10 producing countries accounted for 90% of world coal production.
- Canada ranked twelfth among all global coal-producing countries.

Figure 3. World Coal Production, by Country, 2013



Source: International Energy Agency, *Coal Information 2014*.

Figure 4. World Coal Production, 2005-13

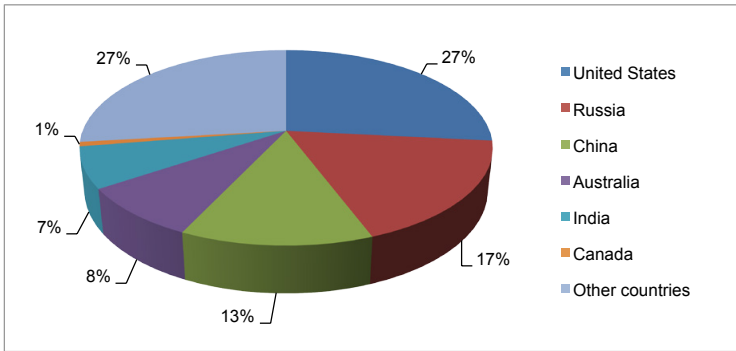


Source: International Energy Agency, *Coal Information 2014*.

WORLD RESERVES

- The United States ranked first with 237 billion t, or 27%.
- Russia was second with 157 billion t, or 17%.
- China was third with 115 billion t, or 13%.
- Australia was fourth with 76 billion t, or 8%.
- India was fifth with 61 billion t, or 7%.
- Canada ranked fifteenth with 6.6 billion t, or 1%.

Figure 5. World Coal Reserves, by Country, 2011

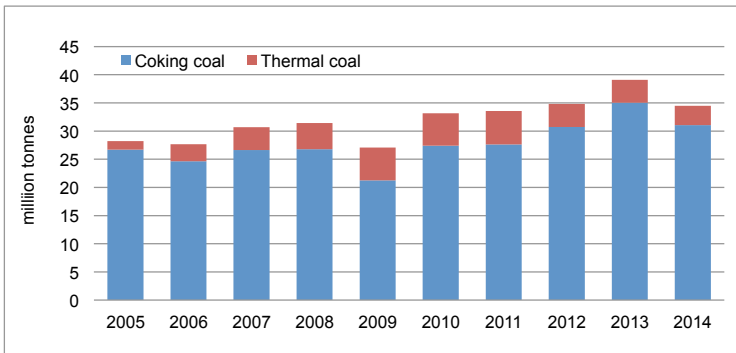


Source: World Energy Council, *World Energy Resources 2013 Survey*.

TRADE

- Canada is the world’s third largest exporter of coking coal after Australia and the United States.
- In 2014, Canada exported 31 Mt of coking coal, down 4 Mt from 35 Mt in 2013. The value of coking coal exports also declined to \$3.9 billion from \$5.1 billion in 2013 due to weaker global demand and the lower coal price.
- Canada’s total coal exports in 2014 were 34.5 Mt, a decrease of 4.6 Mt from 39.1 Mt in 2013.

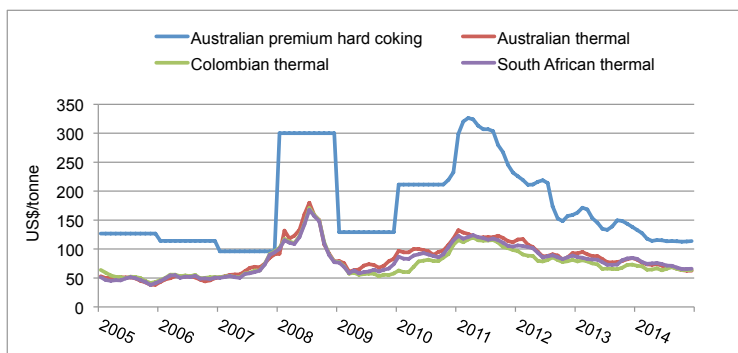
Figure 6. Canadian Coal Exports, 2005-14



Sources: Statistics Canada; Natural Resources Canada.

PRICES

Figure 7. Coal Prices, 2005-14



Notes: All prices are in nominal US dollars, free on board (f.o.b.) port terms. Between 2005 and 2010, Australian premium hard coking coal prices were the annual contract prices. From 2011 to 2014, they were monthly prices. Australian thermal was f.o.b. Newcastle 6,300 kilocalories per kilogram (kcal/kg), Colombian thermal was f.o.b. Bolivar 6,450 kcal/kg, and South African thermal was f.o.b. Richard Bay 6,000 kcal/kg.

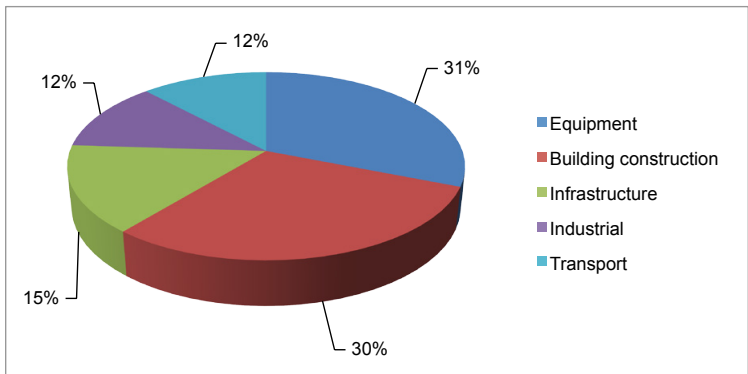
Sources: World Bank; AME; McCloskey; Natural Resources Canada.

Copper

USES

- Copper is used in electrical wires and cables for its electrical conductivity.
- It is also used in plumbing, industrial machinery, and construction materials due to its durability, machinability, corrosion resistance, and ability to be cast with high precision and tolerances.

Figure 1. Copper Global Uses, 2013

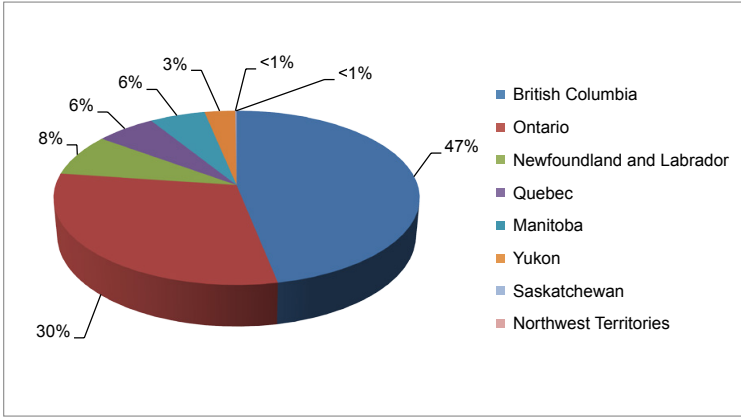


Source: International Copper Study Group.

CANADIAN PRODUCTION

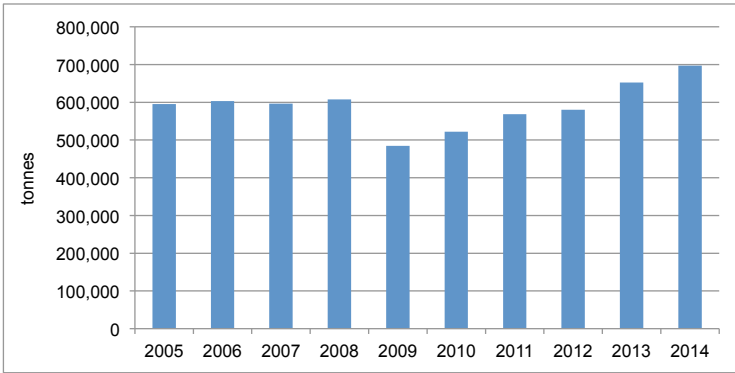
- In 2014, Canadian mines produced 697,503 tonnes (t) of copper in concentrate, a 6.9% increase compared to 652,595 t in 2013.
- The increase was mostly attributed to higher production in British Columbia.
- Canadian refineries produced 325,352 t of refined copper in 2014, a 1.2% increase compared to 321,511 t in 2013.

Figure 2. Canadian Mine Production of Copper, by Province and Territory, 2014



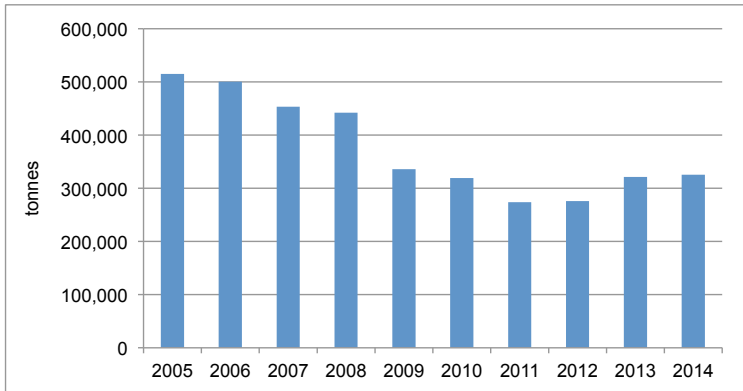
Source: Natural Resources Canada.

Figure 3. Canadian Mine Production of Copper, 2005-14



Source: Natural Resources Canada.

Figure 4. Canadian Refined Copper Production, 2005-14

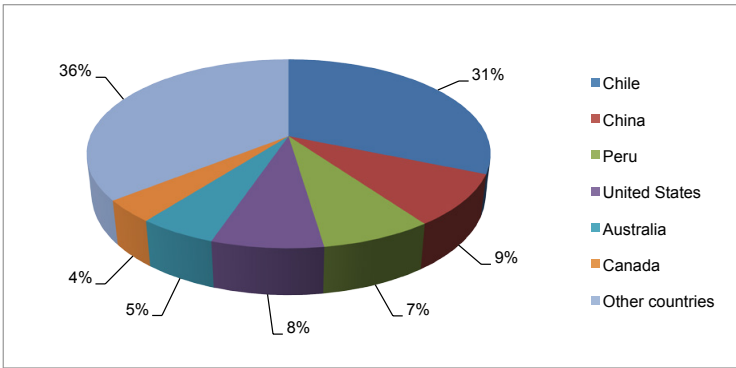


Source: Natural Resources Canada.

WORLD PRODUCTION

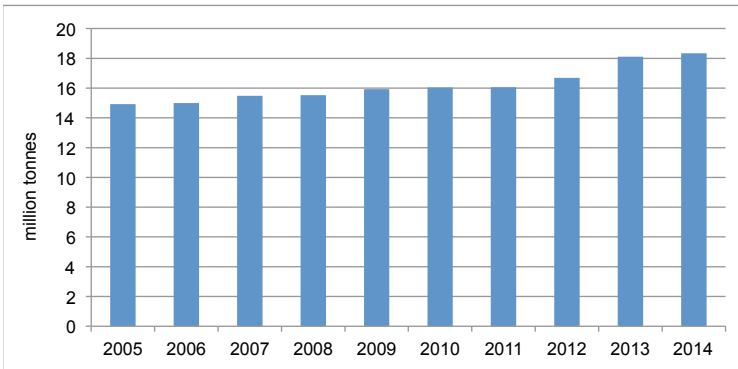
- With 31% of world mine production, Chile was the world's largest copper producer in 2014.
- The top 15 producing countries accounted for 90% of the world's mine production of copper in 2014; Canada ranked ninth.
- China was the largest producer of refined copper, accounting for 34% of the global total.
- The top 17 countries accounted for 90% of global refined copper output; Canada ranked seventeenth.

Figure 5. World Mine Production of Copper, by Country, 2014



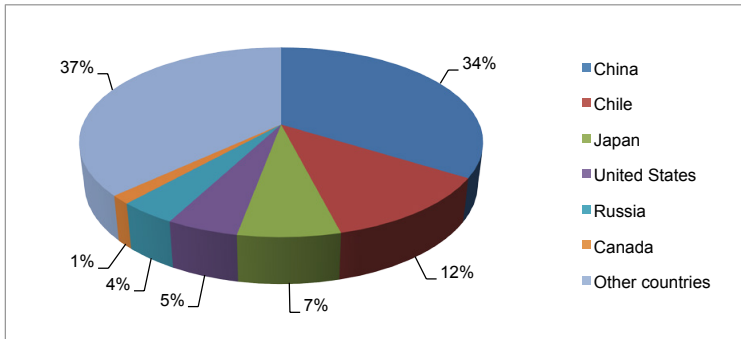
Source: International Copper Study Group.

Figure 6. World Mine Production of Copper, 2005-14



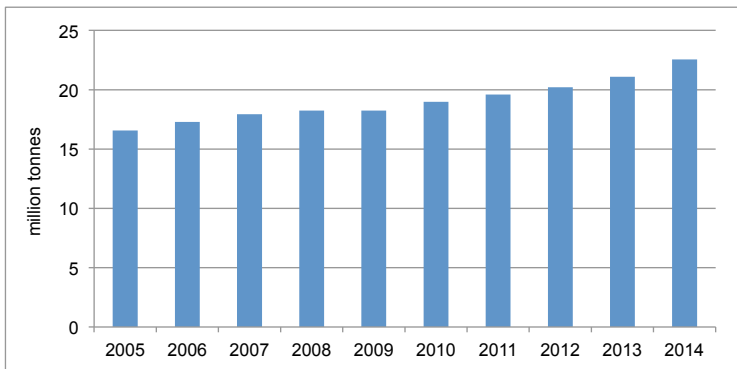
Source: International Copper Study Group.

Figure 7. World Refined Copper Production, by Country, 2014



Source: International Copper Study Group.

Figure 8. World Refined Copper Production, 2005-14

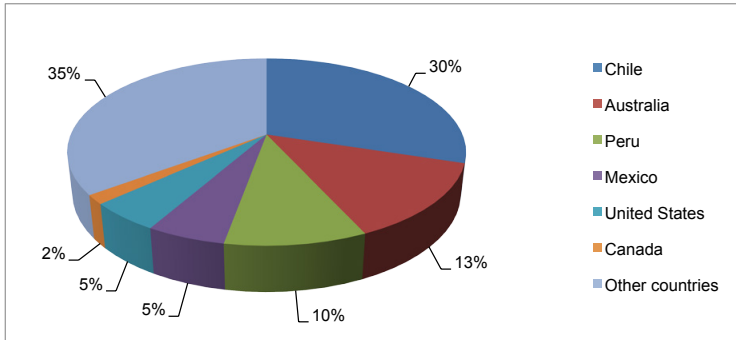


Source: International Copper Study Group.

WORLD RESERVES

- In 2014, Chile ranked first with 209 million tonnes (Mt), or 30% of the world total.
- Australia was second with 93 Mt, or 13%.
- Peru was third with 68 Mt, or 10%.
- Canada ranked twelfth with 11 Mt, or 1.6%.

Figure 9. World Reserves of Copper, by Country, 2014



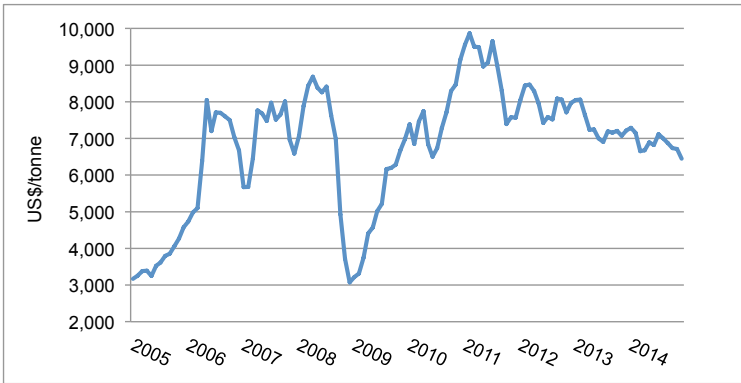
Source: U.S. Geological Survey.

TRADE

- Canada’s total copper exports in 2014 were \$7.1 billion, a 14% increase compared to \$6.2 billion in 2013.
- Copper concentrate exports were \$3 billion, up 16.5% compared to \$2.6 billion in 2013. In terms of volume, concentrate exports were 439,140 t in 2014, a 9.5% increase from 401,094 t in 2013.
- Exports of refined copper were \$1.6 billion, a 21% increase from \$1.3 billion in 2013.
- Exports of other copper-based products totaled \$2.4 billion, a 7.5% increase compared to \$2.3 billion in 2013.
- Canada imported \$3.3 billion worth of copper in various forms, up 7.3% from \$3 billion in 2013.

PRICES

Figure 10. Copper Price, Monthly Average, 2005-14



Source: World Bank Commodity Price Data.

RECYCLING

- Copper is among the few materials that do not degrade or lose their chemical or physical properties in the recycling process. Recycling has the potential to extend the use of resources and minimize waste.
- In 2012, the International Copper Study Group estimated that more than 30% of the world's copper consumption came from recycled copper.

Diamonds

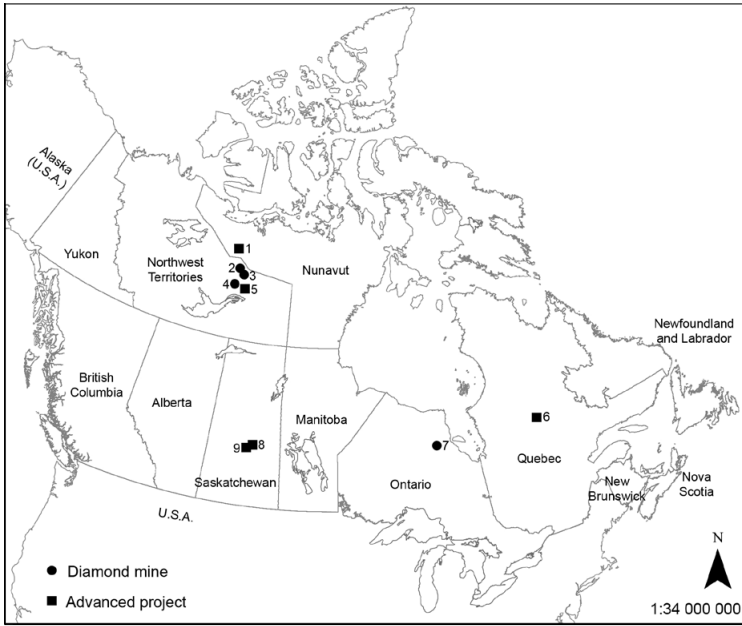
USES

- Diamonds are best known as gemstones, even though only 20% of the world's production by weight is used for jewellery. The other 80%, known as bort, is used in industrial and research applications where diamond's unique properties are required.
- Because it is the hardest known material, diamond has been used for centuries as an abrasive in cutting, drilling, grinding, and polishing. This is the dominant industrial use for diamonds.
- Diamonds also have the highest thermal conductivity of any material at room temperature and are used as a heat sink to dissipate heat in electronic devices such as computers and diode lamps.

CANADIAN PRODUCTION

- In 2014, Canadian mines produced 12.0 million carats (Mct) of diamonds valued at \$2.2 billion, representing a 13.3% increase in volume and a 12.7% increase in value compared to 2013.
- The significant volume increase was mostly attributed to a production hike at the Ekati mine, which started mining from the high-grade Misery pit. Production increases were also observed at all of the other Canadian mines except Snap Lake, where slightly lower production was recorded.
- The jump in value was mostly due to higher mine output, particularly from the high-grade but lower-diamond-unit-value Misery pit, and to a small hike in world market prices for rough diamonds. Another factor influencing the 2014 value was the 5% depreciation of the Canadian dollars versus the U.S. dollar. As sales are made in U.S. dollars, this depreciation translated into a higher exchange return in Canadian dollar terms.

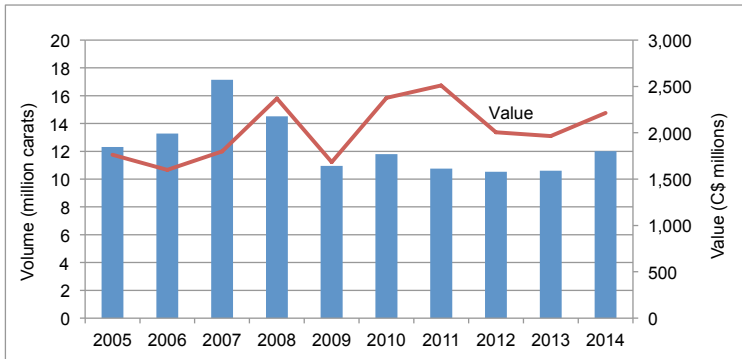
Figure 1. Diamond Mines and Advanced Projects in Canada, 2014



1. Jericho
2. Ekati
3. Diavik
4. Snap Lake
5. Gahcho Kué
6. Renard
7. Victor
8. Star
9. Fort-à-la-Corne

Source: Natural Resources Canada.

Figure 2. Canadian Production of Rough Diamonds, 2005-14

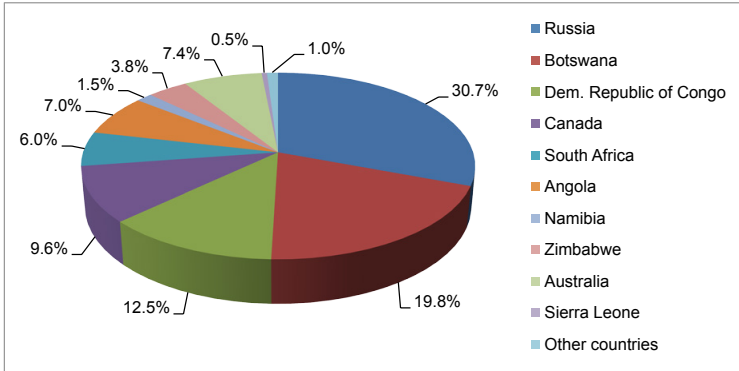


Source: Natural Resources Canada.

WORLD PRODUCTION

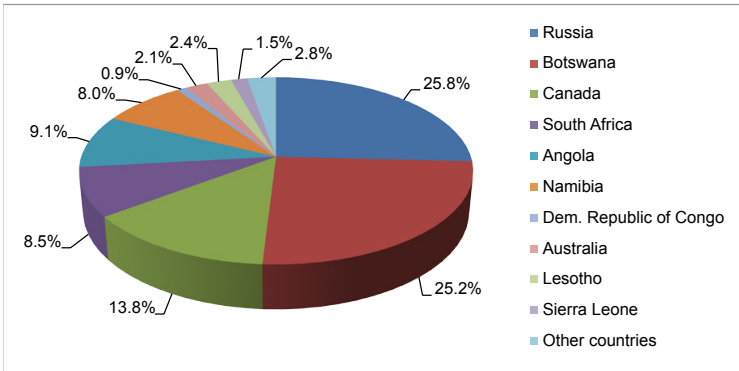
- World rough diamond production in 2014 was estimated at 124.8 Mct valued at US\$14.5 billion, for an average price of US\$116.10/ct. This represented a 3.8% decrease in production on a carat basis and a 3.7% increase on a value basis over 2013.
- Russia displaced Botswana as the largest producer by value, accounting for 25.8% of world production, while the latter accounted for 25.2%.
- Canada was the third-largest producer by value and the fourth-largest producer by volume.
- Six countries accounted for 90% of world production by value.

Figure 3. World Production of Rough Diamonds, by Country, Carat Basis, 2014



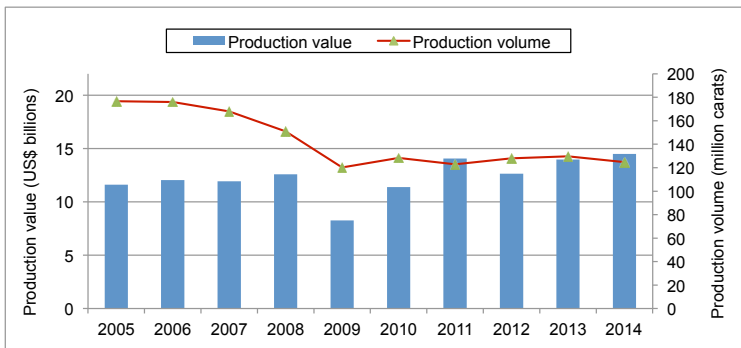
Source: Kimberley Process Certification Scheme.

Figure 4. World Production of Rough Diamonds, by Country, Value Basis, 2014



Source: Kimberley Process Certification Scheme.

Figure 5. World Production of Rough Diamonds, 2005-14



Source: Kimberley Process Certification Scheme.

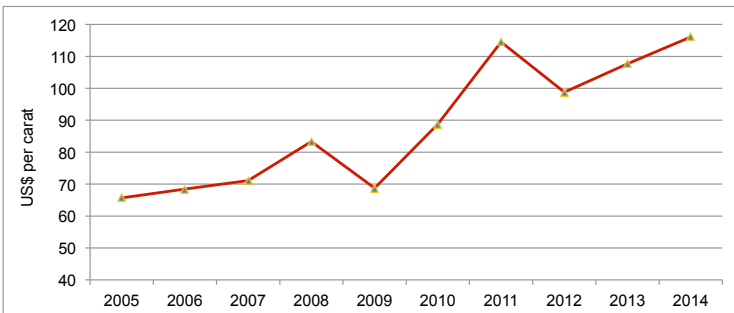
TRADE

- The estimated value of Canada's total primary exports of diamonds in 2014 was \$2.53 billion, a 24.9% increase compared to 2013, essentially due to an increase in volume exported, in line with the production increase.
- Canada's most important diamond export items by value were unsorted rough diamonds, sorted gem-quality rough diamonds, and cut gem-quality diamonds.
- These exports were shipped mostly to Belgium, Botswana, India, the United States, Hong Kong, and Vietnam.
- The estimated value of Canada's total primary imports of diamonds in 2014 was \$639 million, a 1% increase relative to 2013.
- The top import item by value was cut gem diamonds, most exceeding 0.5 ct in weight, which were destined for jewellery manufacturing, followed by uncut gem diamonds.
- On a value basis, more than 90% of the uncut gem diamonds imported into Canada were Canadian goods used in branding programs.

PRICES

- There are no internationally set prices for rough gem-quality diamonds such as there are for many metals and other commodities.
- Mining companies hold “sights” at regular intervals to market their production. The prices reached at these sights are dictated by supply and demand for each of the many categories of diamonds.
- In 2014, world market prices for rough diamonds were reported to have increased by 5-7%.
- However, in comparison, Kimberley Process statistics indicate that the average per-carat value of production (all categories aggregated) increased by 7.8% to US\$116.10/ct in 2014 relative to 2013.

Figure 6. Rough Diamonds, Average Value Per Carat, 2005-14



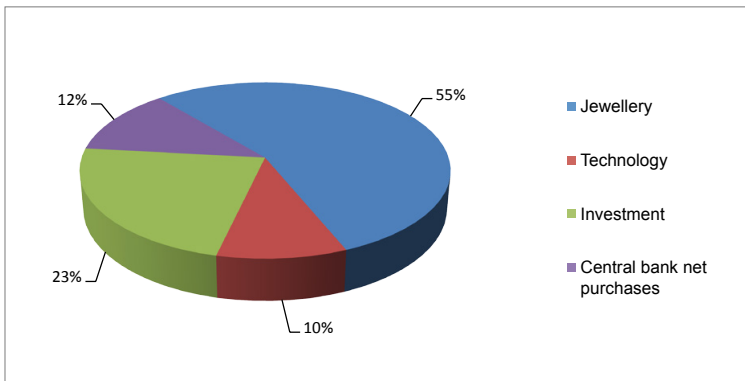
Source: Kimberley Process Certification Scheme.

Gold

USES

- The predominant use for gold is in jewellery (rings, necklaces, watches, etc.).
- Approximately 10% of gold demand is in technology applications, mostly as a component of micro-circuitry in a range of electronic products.
- Investment demand for gold takes the form of wafers, bars, and coins, primarily as a hedge against inflation and market volatility. Gold-bearing exchange-traded funds are another source of investment demand for gold.
- Central bank net purchases comprised about 12% of gold demand in 2014.

Figure 1. Gold, Global Demand, 2014



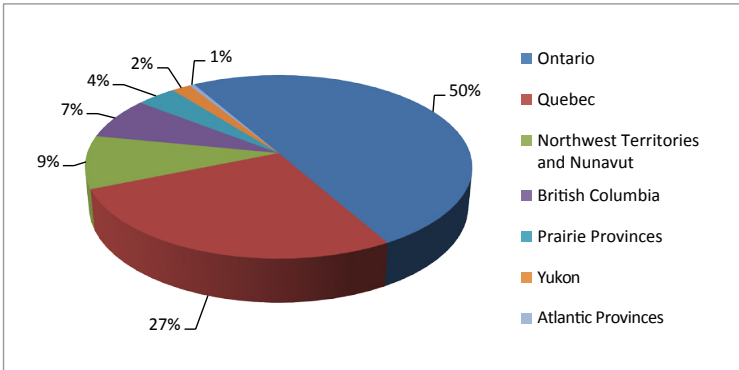
Source: World Gold Council.

CANADIAN PRODUCTION

- In 2014, Canadian mines produced an estimated 152.1 tonnes (t) of gold, compared to 133.6 t in 2013.
- The production increase can be attributed to increases at the Detour, Timmins West, Macassa, and Young-Davidson mines in Ontario; the Mount Milligan mine in British Columbia; and the Goldex and Canadian Malartic mines in Quebec.

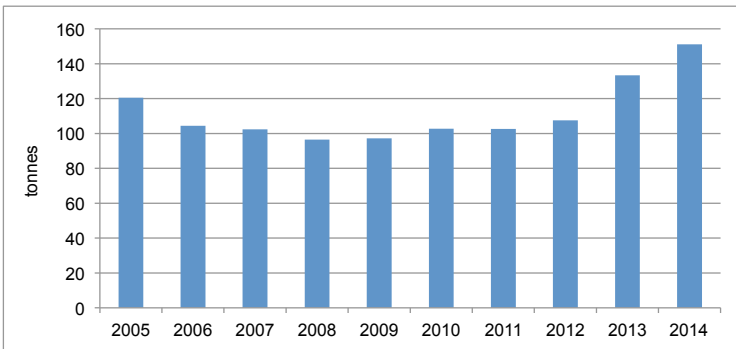
- The Éléonore gold mine in Quebec started production in the fourth quarter of 2014 and is expected to reach full commercial production by the end of the first quarter of 2015. The mine is expected to produce between 9 and 10 t of gold in 2015.

Figure 2. Canadian Mine Production of Gold, by Region, 2014



Source: Natural Resources Canada.

Figure 3. Canadian Mine Production of Gold, 2005-14

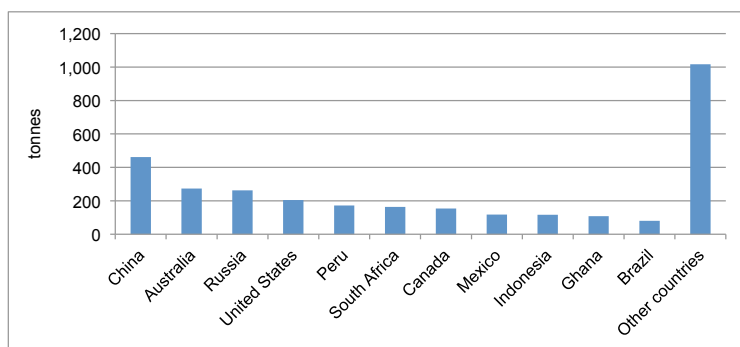


Source: Natural Resources Canada.

WORLD PRODUCTION

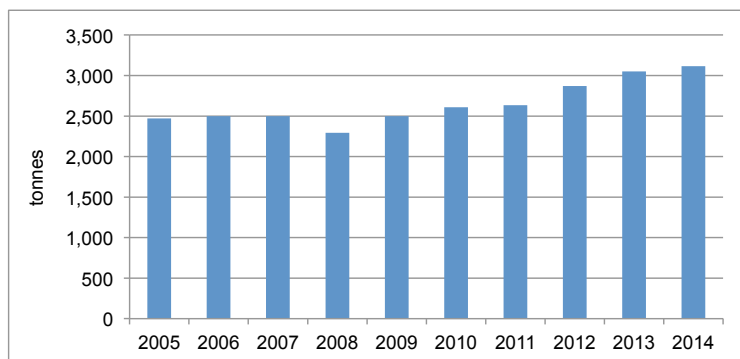
- World mine production of gold reached an estimated 3,133 t in 2014, up 2% from 2013.
- The top five gold-producing countries were China, Australia, Russia, the United States, and Peru. Together they accounted for 44% of total production. Globally, the top 20 gold-producing countries accounted for over 80% of the world's annual gold output.
- Canada ranked seventh in terms of gold production in 2014.

Figure 4. World Mine Production of Gold, by Country, 2014



Sources: GFMS; Thomson Reuters.

Figure 5. World Mine Production of Gold, 2005-14

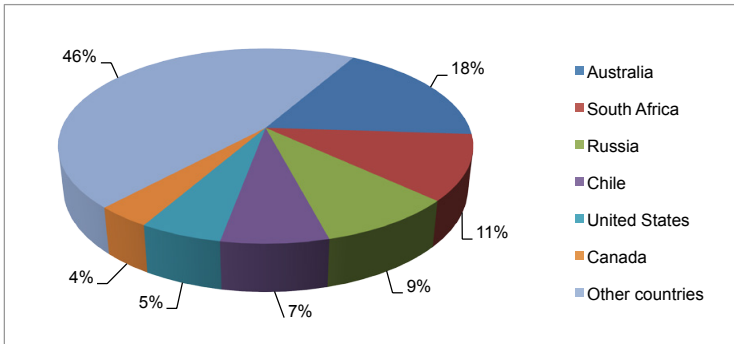


Source: World Gold Council.

WORLD RESERVES

- In 2014, total world gold reserves, as calculated by the U. S. Geological Survey, were an estimated 55,400 t.
- Australia ranked first with 9,800 t.
- South Africa was second with 6,000 t.
- Russia was third with 5,000 t.
- Chile was fourth with 3,900 t.
- The United States was fifth with 3,000 t.
- Canada ranked ninth with 2,000 t.

Figure 6. World Gold Reserves, by Country, 2014



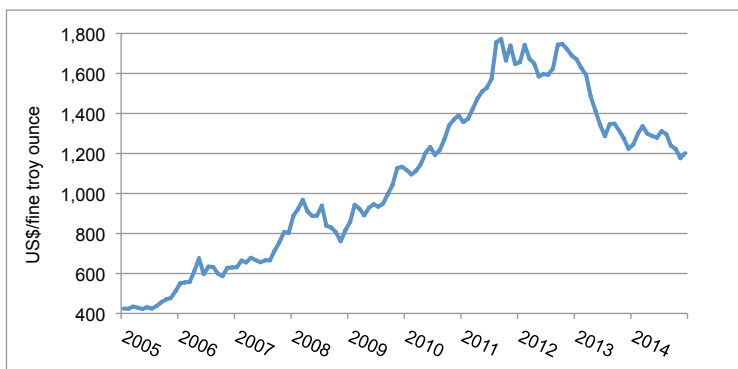
Source: U.S. Geological Survey.

TRADE

- The total value of Canadian gold imports was \$9.9 billion in 2014; the total value of gold exports was \$18 billion.
- Canada exported 370,000 t of gold in unwrought form valued at \$16.5 billion in 2014, compared to 345,740 t in 2013.
- Canada also exported smaller quantities of gold in ores and concentrates and in semi-manufactured forms.
- Canada imported 363,367 t of gold in unwrought form valued at \$8.81 billion, primarily destined for processing at gold refineries. This compares to 400,594 t imported in 2013.

PRICES

Figure 7. Gold Prices, Monthly Average (PM Fix), 2005-14



Source: The London Bullion Market Association.

RECYCLING

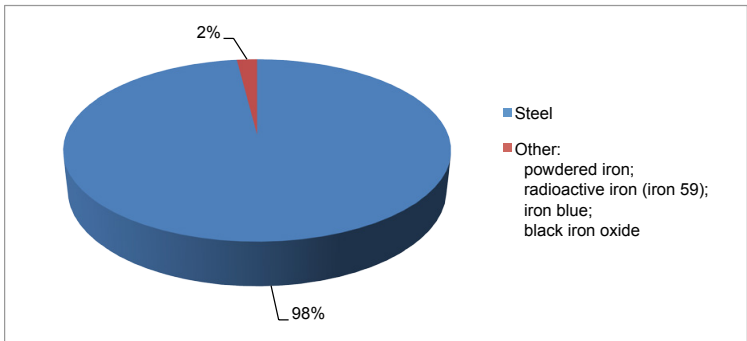
- Gold is a metal that is continuously being recycled. Most gold recycling takes the form of old jewellery that is melted down for its gold content.
- In 2014, an estimated 1,125 t of recycled gold entered the marketplace, down from 1,287 t in 2013. The amount of recycled gold entering the market is largely governed by the gold price.
- In recent years, an increasing amount of gold has been recovered from a range of end-of-life electronic products.

Iron Ore

USES

- The primary use of iron ore (98%) is to make steel.
- The remaining 2% is used in other forms in various applications such as:
 - powdered iron, for metallurgy products, magnets, high-frequency cores, auto parts, and catalysts;
 - radioactive iron (iron 59), for medicine and as a tracer element in biochemical and metallurgical research;
 - iron blue, in paints, printing ink, plastics, cosmetics (eye shadow), artist colours, laundry blue, paper dyeing, fertilizer, baked enamel finishes on vehicles and appliances, and industrial finishes; and
 - black iron oxide, as a pigment in polishing compounds, metallurgy, medicine, magnetic inks, and ferrites for the electronics industry.

Figure 1. Iron Ore, Global Uses, 2014

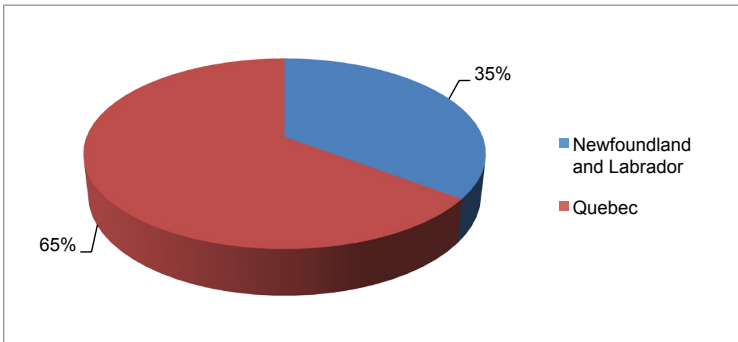


Source: Iron – Minerals Education Coalition.

CANADIAN PRODUCTION

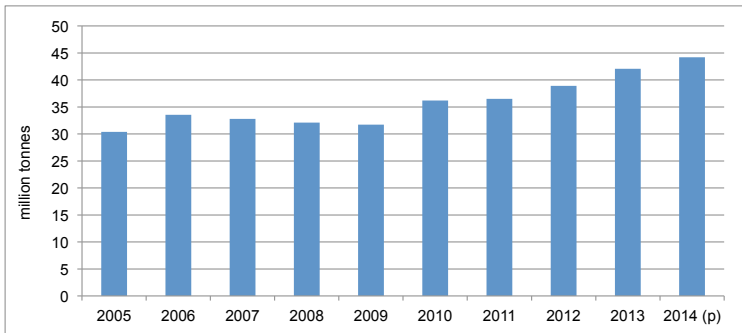
- In 2014, Canadian mines increased their production by 5.1% to 44.2 million tonnes (Mt) of iron ore in concentrate and pellets, compared to 42.1 Mt in 2013.
- This increase stems from new output from the expansion projects of established producers.
- Most of Canada’s iron ore production comes from the Labrador Trough region of Quebec and Newfoundland and Labrador.
- In September 2014, Baffinland Iron Mines Corporation commenced mining operations at its Mary River project in Nunavut with the expected first shipment of 0.5 Mt scheduled for July 2015. The company’s mining project is expected to produce 3.5 Mt of treated iron ore annually beginning in 2016.
- Canada’s estimated crude steel production for 2014 was 12.6 Mt, a small 1.4% increase from the 12.4 Mt produced in 2013.

Figure 2. Canadian Production of Iron Ore, by Province, 2014 (p)



Source: Natural Resources Canada.
(p) Preliminary.

Figure 3. Canadian Production of Iron Ore, 2005-14

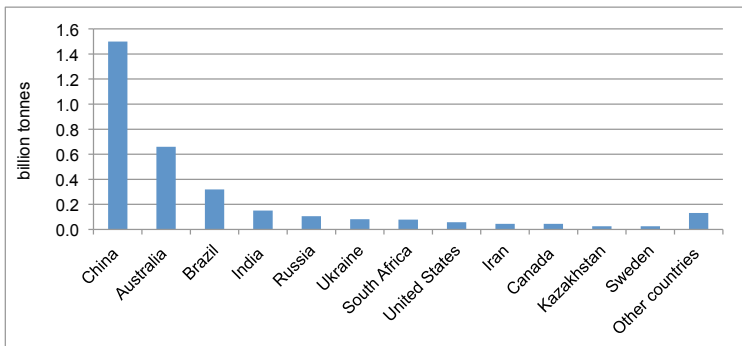


Source: Natural Resources Canada.
 (p) Preliminary.

WORLD PRODUCTION

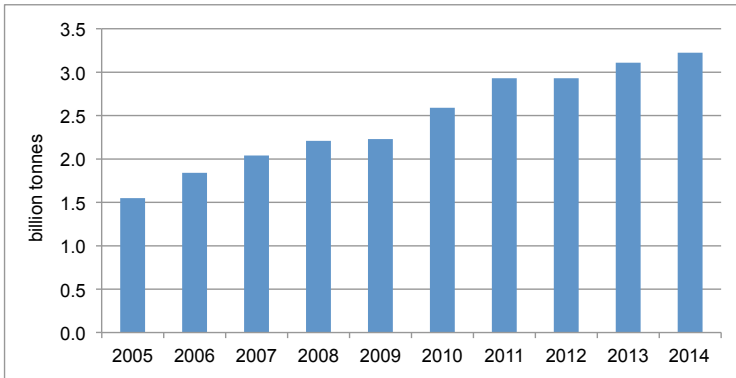
- In 2014, China accounted for 46.5% of world production and was the world’s largest producer of iron ore.
- The top five producing countries accounted for 85% of global production.
- Canada was the tenth largest producer.

Figure 4. World Mine Production of Iron Ore, by Country, 2014



Sources: U.S. Geological Survey; Natural Resources Canada.

Figure 5. World Mine Production of Iron Ore, 2005-14

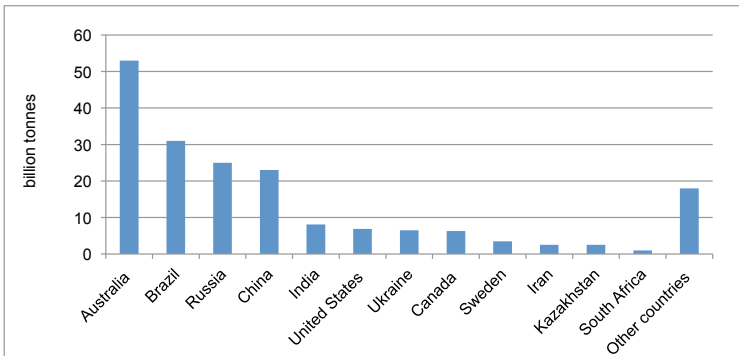


Source: U.S. Geological Survey.

WORLD RESERVES

- In 2014, Australia ranked first with 53 billion tonnes (t), or 27.9%.
- Brazil was second with 31 billion t, or 16.3%.
- Russia was third with 25 billion t, or 13.2%.
- China was fourth with 23 billion t, or 12.1%.
- Canada was eighth with 6 billion t, or 3.3%.

Figure 6. World Reserves of Crude Iron Ore, by Country, 2014



Sources: U.S. Geological Survey.

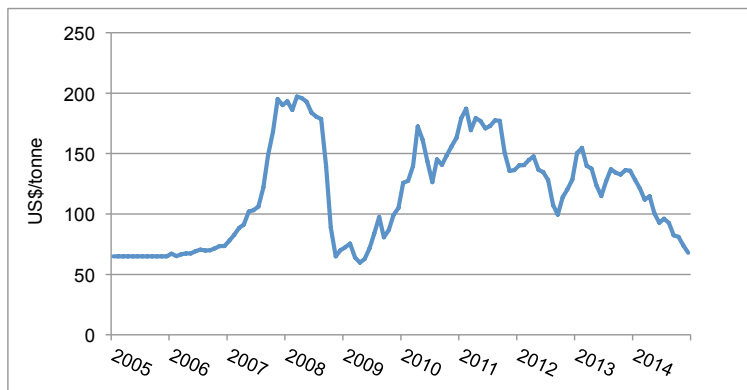
TRADE

- Canada exported 40.3 Mt of iron ore (valued at \$4.4 billion) in 2014, up 6.0% from 38.0 Mt in 2013. Pellets accounted for 34.9% (\$1.7 billion) and concentrates accounted for 65.1% (\$2.7 billion).
- Canada imported 9.0 Mt (valued at \$1.1 billion) in 2014, up 46.5% from 6.1 Mt in 2013. Most of the imported pellets (96.5%) and concentrates (60.0%) came from the United States.
- The Canadian steel industry exported 5.8 Mt in 2013 and imported some 8.9 Mt for domestic consumption, making it a net importer of semi-finished and finished steel products.

PRICES

- Falling prices in 2014 reflected a raw material oversupply due to declining demand from China.

Figure 7. Iron Ore Prices, (1) Monthly Average, 2005-14



Source: World Bank Commodity Price Data.

(1) Iron ore, CFR spot (\$/dmu).

CFR = cost and freight; dmtu = dry metric ton unit

(a unit is 10 kg or 1 t divided into 100 units, e.g., \$8/dmtu = \$800/t).

RECYCLING

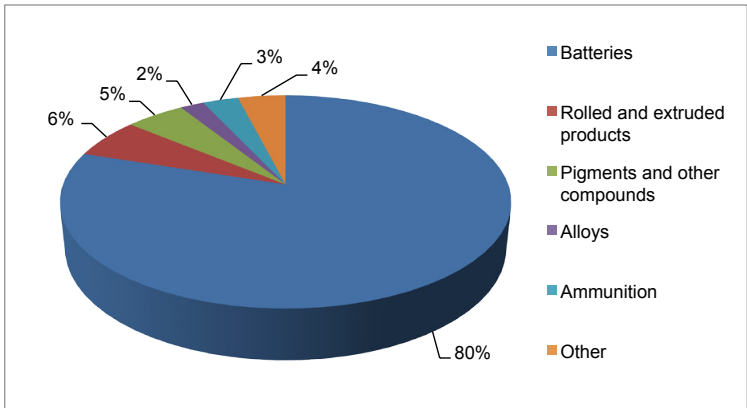
- Steel is 100% recyclable, which means it can be reprocessed into the same material of the same quality again and again. Recycling accounts for significant energy and raw materials savings, i.e., more than 1,400 kilograms (kg) of iron ore, 740 kg of coking coal, and 120 kg of limestone are saved for every tonne of steel scrap made into new steel.
- The global market for steel scrap is projected to reach 793 Mt by 2020, driven by the growing demand for steel and the increasing shift toward the use of electric arc furnaces in the manufacture of steel.

Lead

USES

- The primary use of lead is in lead-acid batteries for automobiles and other vehicles (85% of total use).
- Other battery applications include large stationary batteries used for back-up power and for a range of smaller vehicles (e.g., motorcycles, forklift trucks).
- Lead is also used as rolled sheet for roofing, mostly in Europe; in chemical compounds and alloys; and for ammunition.

Figure 1. Lead Global Uses, 2014



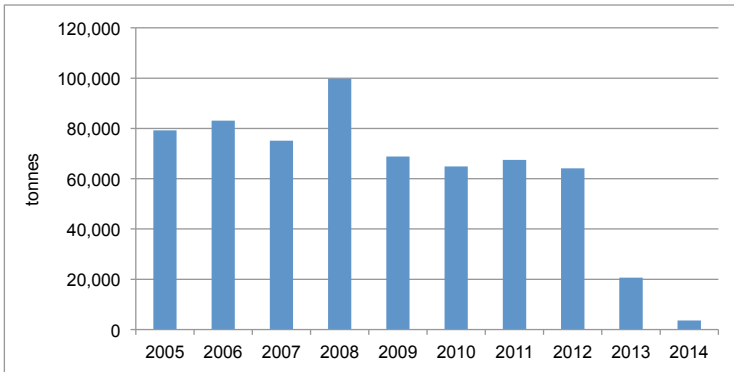
Source: International Lead and Zinc Study Group.

CANADIAN PRODUCTION

- Canadian mines produced an estimated 3,500 tonnes (t) of lead in concentrate in 2014, compared to 20,678 t in 2013.
- This significant decrease can be attributed to the permanent closure of the Brunswick mine located near Bathurst, New Brunswick. This mine was a large producer of lead over its 46-year life.
- Only two mines produced lead in concentrates in Canada in 2014: the Myra Falls mine in British Columbia and the Wolverine mine in Yukon.

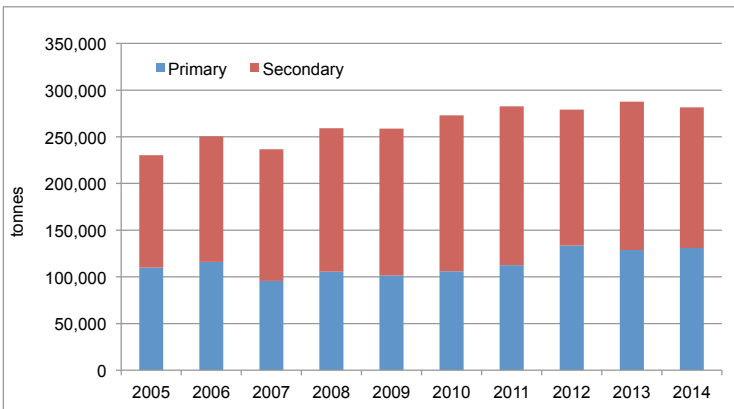
- Refined lead metal production for 2014 (from both primary and secondary sources) was 281,456 t, compared to 287,584 t in 2013.
- Canada operates two primary and four secondary lead smelters. Due to the large input from the processing of used lead-acid batteries, recycled (secondary) lead production comprised 54% of the total refined metal production in 2014.

Figure 2. Canadian Mine Production of Lead, 2005-14



Source: Natural Resources Canada.

Figure 3. Canadian Refined Lead Metal Production (Primary and Secondary), 2005-14

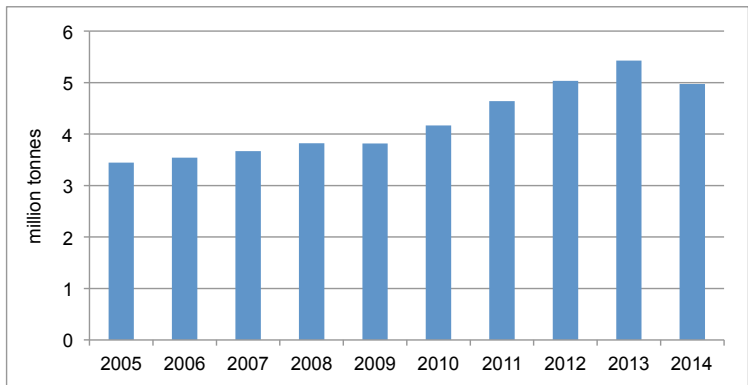


Source: Natural Resources Canada.

WORLD PRODUCTION

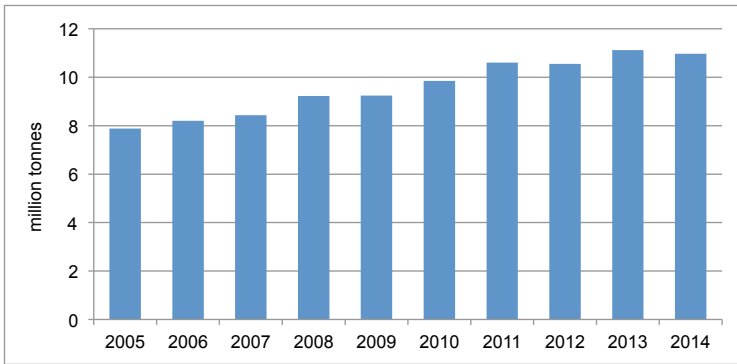
- China accounted for 48% of total world lead mine production in 2014.
- Together with Australia, the United States, Peru, and Mexico, these top five lead mine producing countries accounted for 80% of the close to 5 million tonnes (Mt) of world lead mine production in 2014.
- For refined lead production, which includes metal refined from both primary and secondary sources, the top five producing countries in 2014 were China, the United States, South Korea, India, and Germany. Together these countries accounted for 67% of the 11 Mt of lead metal produced in 2014.
- Canada ranked seventh in terms of world refined lead production.

Figure 4. World Mine Production of Lead, 2005-14



Source: International Lead and Zinc Study Group.

Figure 5. World Refined Lead Production, 2005-14

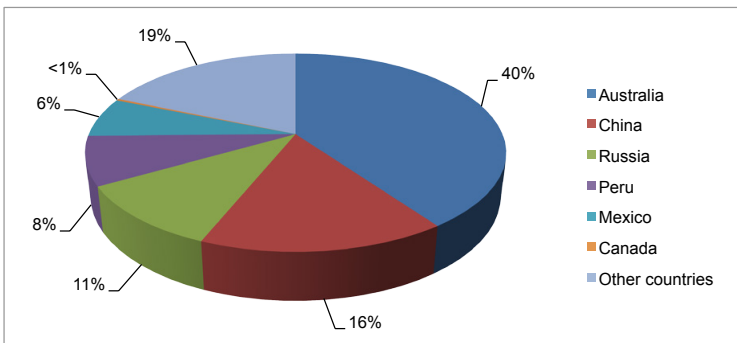


Source: International Lead and Zinc Study Group.

WORLD RESERVES

- In 2014, total world lead reserves, as calculated by the U.S. Geological Survey, were an estimated 87 Mt.
- Australia ranked first with 35 Mt of contained lead.
- China was second with 14 Mt.
- Russia was third with 9.2 Mt.
- Peru was fourth with 7 Mt.
- Mexico was fifth with 5.6 Mt.
- Canadian lead reserves were estimated to be 247,000 t.

Figure 6. World Reserves of Lead, by Country, 2014



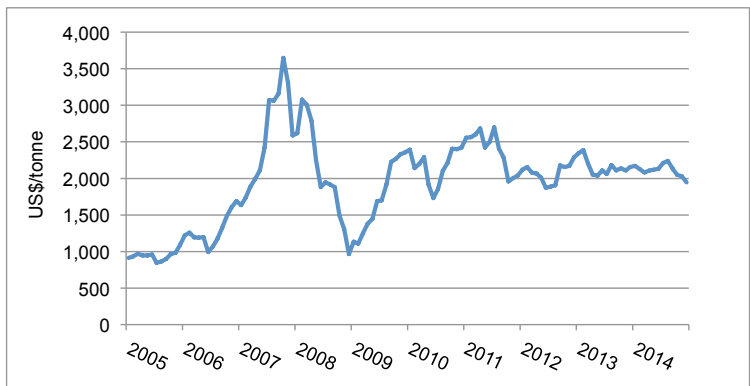
Source: U.S. Geological Survey.

TRADE

- In 2014, total exports of lead and lead products from Canada were valued at \$804,765 million; imports were valued at \$758,677 million.
- In 2014, Canadian lead smelters imported 111,000 t of lead in concentrates, compared to 89,000 t in 2013. Concentrates were imported mainly from Peru, the United States, Australia, and Mexico.
- Canada exported 271,000 t of unwrought lead metal in 2014, compared to 258,000 t in 2013. The majority of these exports went to the United States with minor amounts shipped to China and Japan.

PRICES

Figure 7. Lead, Monthly Average Three-Month Prices, 2005-14



Source: London Metal Exchange.

RECYCLING

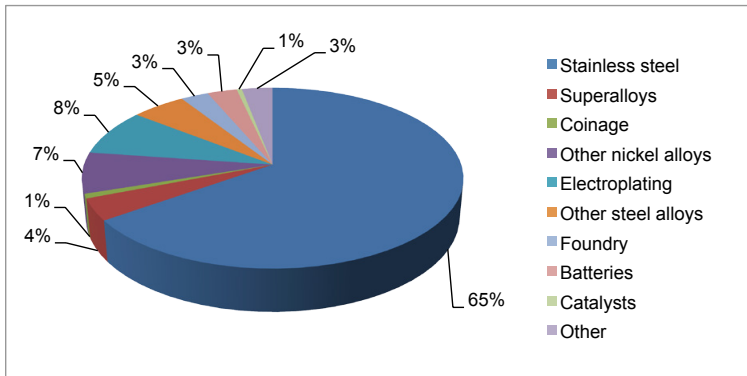
- Recycled lead from lead-acid batteries is one of the most recycled metals. Over 95% of the lead contained in batteries is recovered and recycled for use in new batteries.
- Canada has four secondary lead processing plants located in British Columbia (1), Ontario (1), and Quebec (2). In addition, secondary lead is processed at Canada's two primary smelters located in British Columbia and New Brunswick. In 2014, a total of 150,629 t of secondary lead metal was produced in Canada, down slightly from the 158,878 t produced in 2013.

Nickel

USES

- Stainless steel is the largest end use for nickel, accounting for two thirds of total production.
- Nickel is also used as an alloying agent in the manufacture of both nonferrous and ferrous metal products.
- Another important use is nickel electroplating, in which a thin layer of nickel is coated onto a metal object as a decorative feature or to provide resistance to both corrosion and wear.

Figure 1. Nickel, Global Uses, 2014

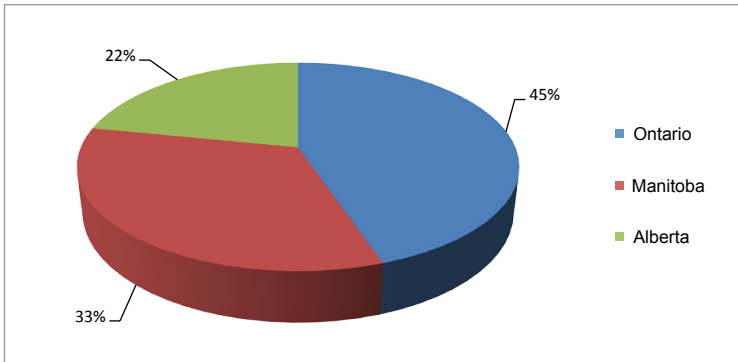


Source: Roskill 2014.

CANADIAN PRODUCTION

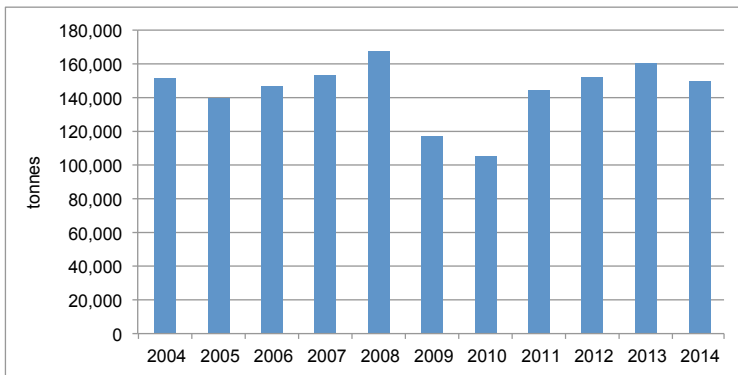
- In 2014, Canada mined roughly 30 million tonnes (Mt) of ore containing approximately 285,000 tonnes (t) of nickel from 16 mines in four provinces.
- Canada also produced 150,600 t of refined nickel at three refineries located in Fort Saskatchewan, Alberta; Thompson, Manitoba; and Sudbury, Ontario.

Figure 2. Canadian Refined Nickel Production, by Province, 2014



Source: Natural Resources Canada.

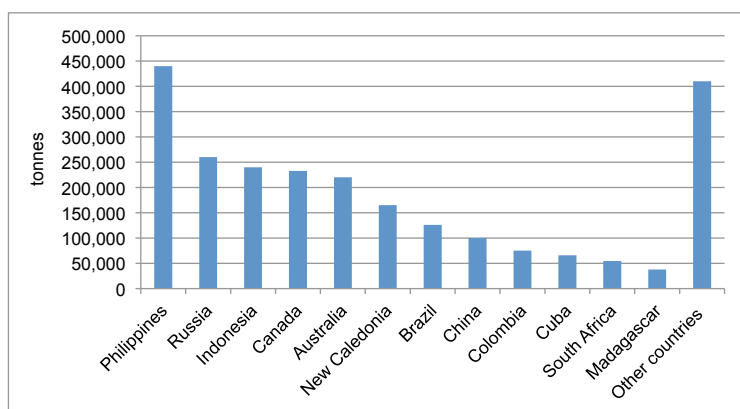
Figure 3. Canadian Refined Nickel Production, 2005-14



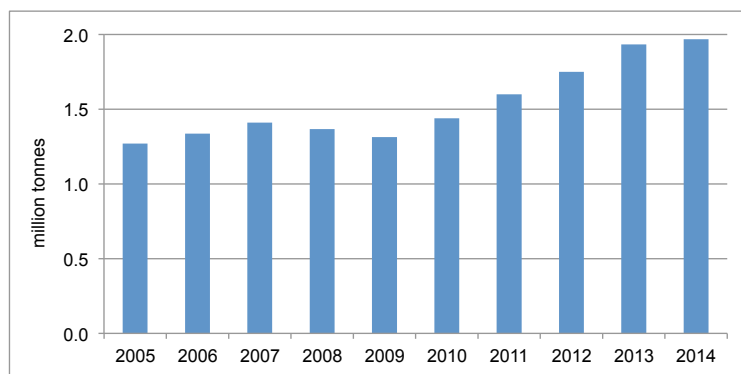
Source: Natural Resources Canada.

WORLD PRODUCTION

- China is the world’s largest producer of refined nickel, accounting for 30% of world production.
- Overall, Canada ranked fourth among world refined nickel producers after China (696,700 t), Russia (234,000 t), and Japan (177,300 t).
- Five countries account for roughly 71% of world refined nickel production.

Figure 4. World Mine Production of Nickel, by Country, 2014

Source: U.S. Geological Survey.

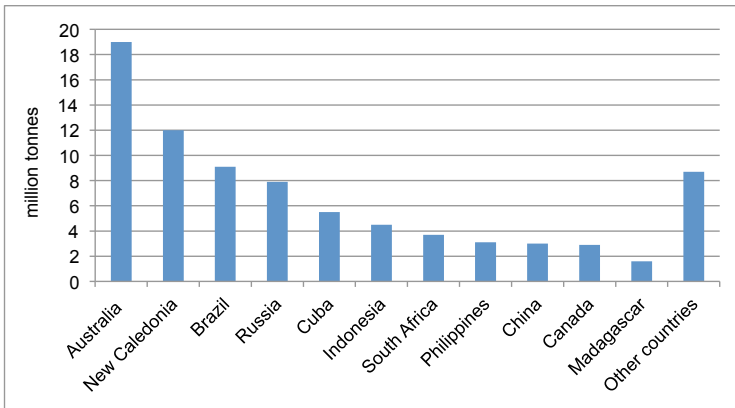
Figure 5. World Refined Nickel Production, 2005-14

Source: International Nickel Study Group.

WORLD RESERVES

- In 2014, Australia ranked first with 19 Mt of contained nickel, or 23.5%.
- New Caledonia was second with 12 Mt, or 15%.
- Brazil was third with 9.1 Mt, or 11%.
- Russia was fourth with 7.9 Mt, or 10%.
- Canada was tenth with 2.9 Mt, or 3.6%.

Figure 6. World Reserves of Nickel, by Country, 2014



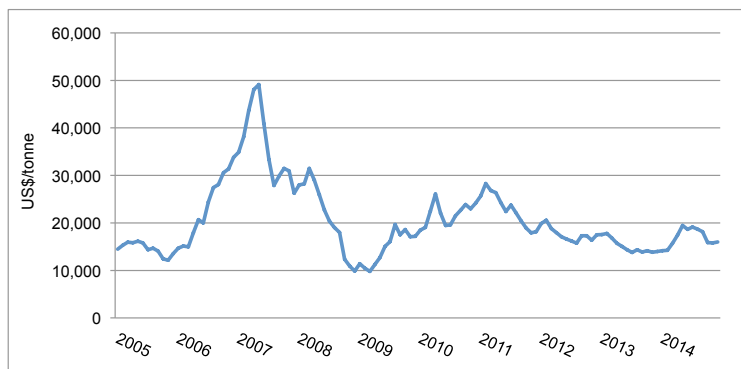
Source: U.S. Geological Survey.

TRADE

- Total exports of nickel and nickel products from Canada were valued at \$5.481 billion in 2014; imports were valued at \$911million.
- Canada exported 75,967 t of nickel in matte to Norway and 49,047 t of smelted nickel oxide to the United Kingdom for further processing.
- Nickel and nickel compounds are essential for the manufacture of countless products on which we rely on a daily basis. Reflecting this vast use, Canada’s nickel and nickel-related products are exported to more than 100 countries.

PRICES

Figure 7. Nickel, Monthly Average Three-Month Prices, 2005-14



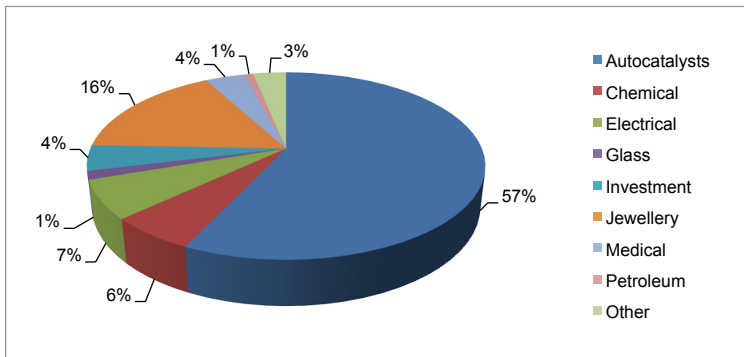
Source: London Metal Exchange.

Platinum Group Metals

USES

- The manufacture of catalytic converters represents the largest use of platinum group metals (PGM),⁶ accounting for more than half of total consumption.
- PGM are important components in a variety of downstream manufacturing sectors, including jewellery, chemicals, glass, medical equipment, and dental applications.
- PGM are also used as a financial investment vehicle for investors interested in acquiring precious metals in their portfolios.

Figure 1. Platinum Group Metals, Global Uses, 2013



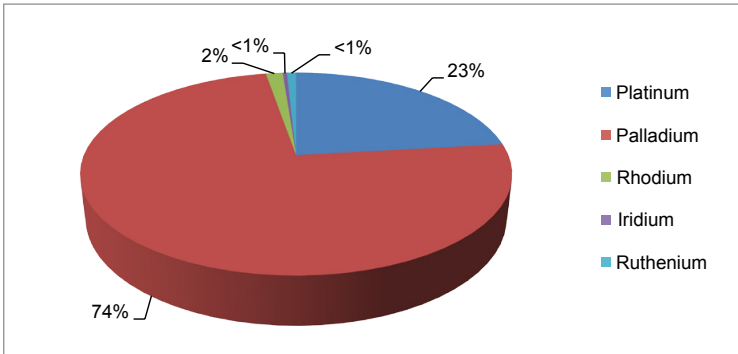
Source: Johnson Matthey.

⁶ The platinum group metals (PGM) are six metallic elements (platinum, palladium, rhodium, ruthenium, osmium, and iridium) in the periodic table that have similar physical and chemical properties, and tend to occur together in the same mineral deposits. Global statistics on PGM production typically report for platinum, palladium, and rhodium. Canada's mine statistics include ruthenium and iridium, but not osmium.

CANADIAN PRODUCTION

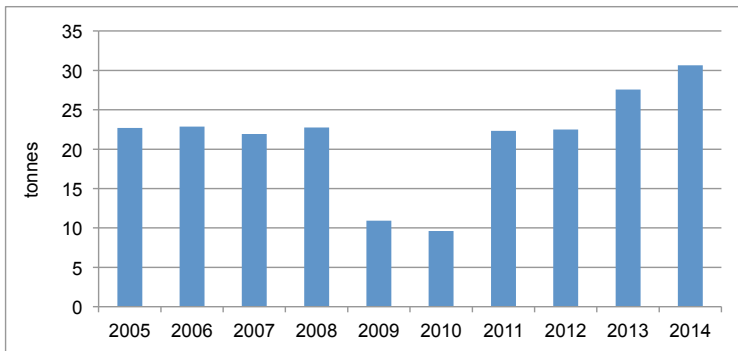
- In 2014, Canada produced an estimated 985,000 troy ounces (oz) of PGM⁷ in mined concentrate form.
- While Canada does not refine PGM domestically, they are recovered from 10 operating mines located in 4 Canadian provinces.

Figure 2. Canadian Mine Production of Platinum Group Metals, 2014 (p)



Source: Natural Resources Canada.
 (p) Preliminary estimate.

Figure 3. Canadian Mine Production of Platinum Group Metals, 2005-14



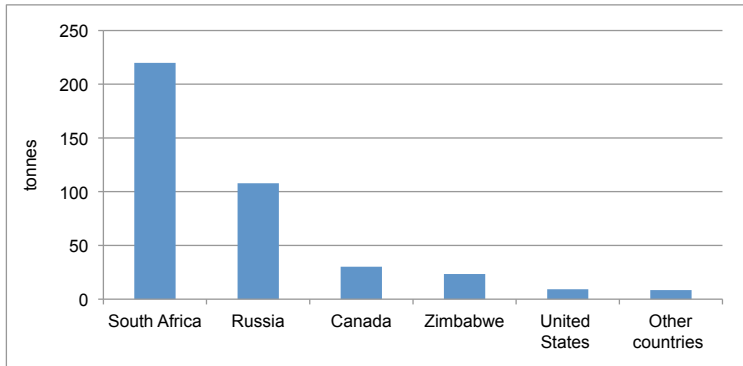
Source: Natural Resources Canada.

⁷ Canadian companies provide no production estimates for osmium.

WORLD PRODUCTION

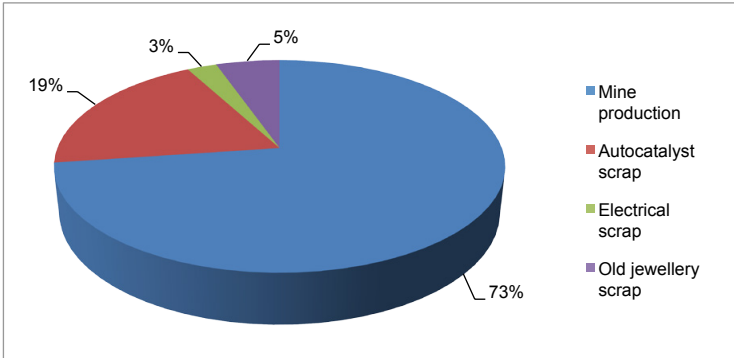
- South Africa was the world's largest mine producer of PGM (7,044,000 troy oz), accounting for 55% of global mine production in 2013. Russia, the second largest mine producer (3,468,000 troy oz), accounted for 26% of global mined production. Overall, Canada ranked third among world mine producers of PGM.
- An estimated 17,707,000 troy oz of PGM were supplied from mined and recycled sources in 2013. Mining accounts for close to 75% of the global PGM supply while recycling accounts for slightly more than 25%.

Figure 4. World Mine Production of Platinum Group Metals, by Country, 2013



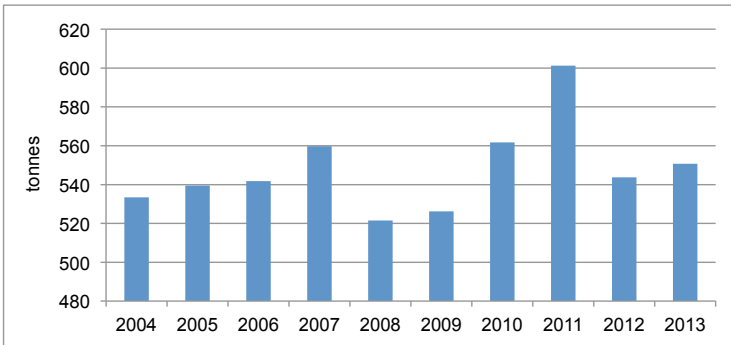
Sources: Johnson Matthey; Natural Resources Canada.

Figure 5. World Supply of Platinum Group Metals, by Source, 2013



Source: Johnson Matthey.

Figure 6. World Supply of Platinum Group Metals, 2004-13

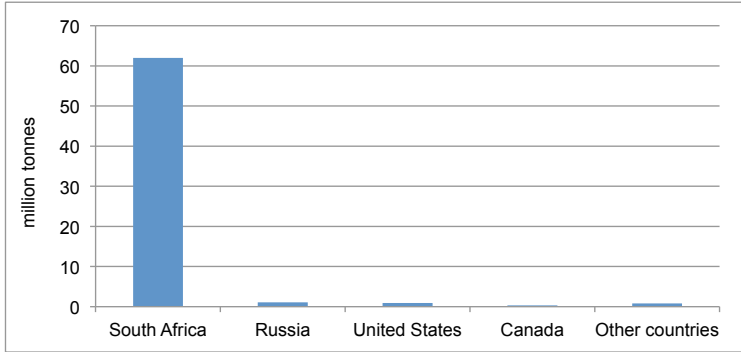


Source: Johnson Matthey.

WORLD RESERVES

- South Africa has, by far, the world's largest reserves of PGM.

Figure 7. World Reserves of Platinum Group Metals, by Country, 2014



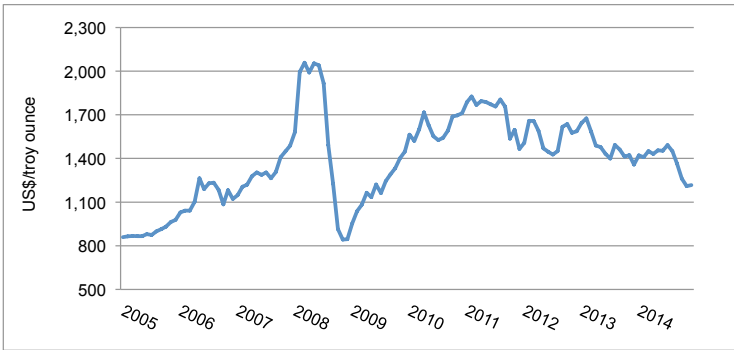
Source: U.S. Geological Survey.

TRADE

- Total exports of PGM and PGM products from Canada were valued at \$597 million in 2014 with the United States and the United Kingdom accounting for close to 80% of the value.
- Imports were valued at \$307 million with the United States and the United Kingdom accounting for more than 50% of the value.
- Overall, Canada traded in PGM and PGM-related products with more than 50 countries.

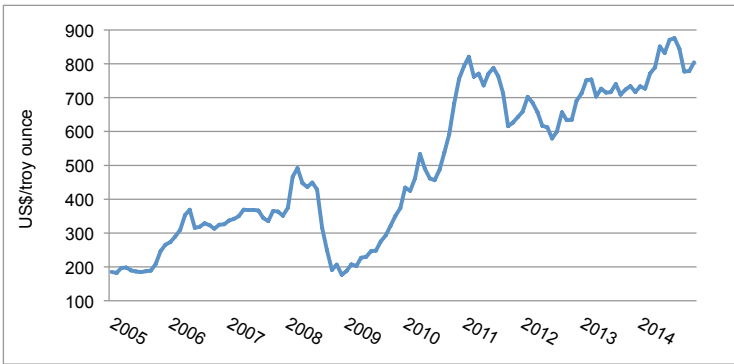
PRICES

Figure 8. Platinum, AM Prices, Monthly Average, 2005-14



Source: London Metal Exchange.

Figure 9. Palladium, AM Prices, Monthly Average, 2005-14



Source: London Metal Exchange.

Potash

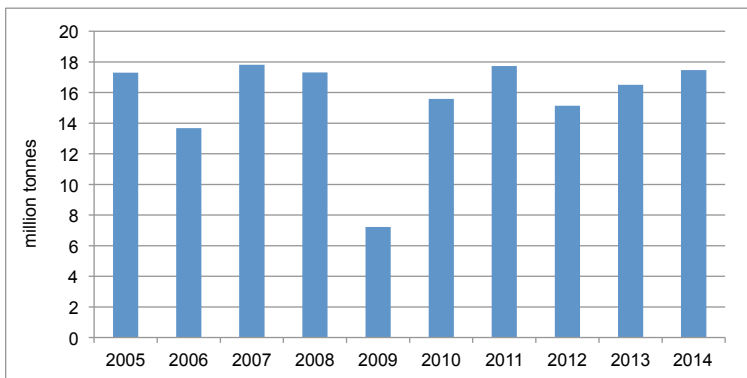
USES

- Potash is primarily used as a fertilizer (approximately 95%) to support plant growth, increase crop yield and disease resistance, and intensify water preservation.
- Small quantities are used in the manufacture of potassium-bearing chemicals such as detergents, ceramics, pharmaceuticals, and water conditioners, as well as an alternative to de-icing salt.
- Potassium is an important element of the human diet that is essential for growth and the maintenance of tissues, muscles, and organs, as well as the electrical activity of the heart. Good sources of potassium include citrus fruits and juices, milk, chicken, red meat, fish, soy products, root vegetables, bananas, nuts, and yogurt.
- There are no substitutes for potash.

CANADIAN PRODUCTION

- In 2014, Canada produced 17.5 million tonnes (Mt) of potassium chloride (KCl), an increase of 5.8% compared to 16.5 Mt in 2013.

Figure 1. Canadian Mine Production of Potash, 2005-14

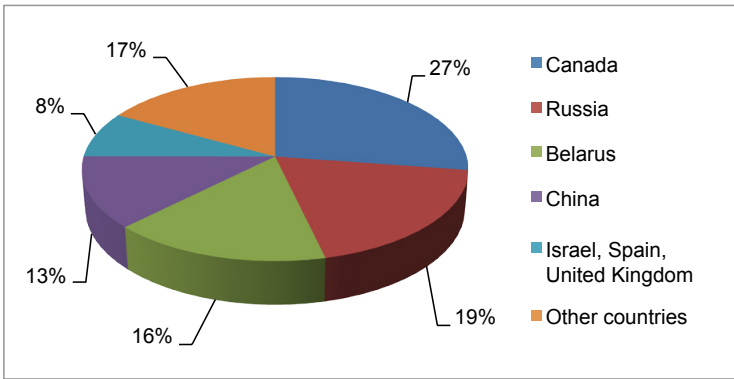


Source: Natural Resources Canada.

WORLD PRODUCTION

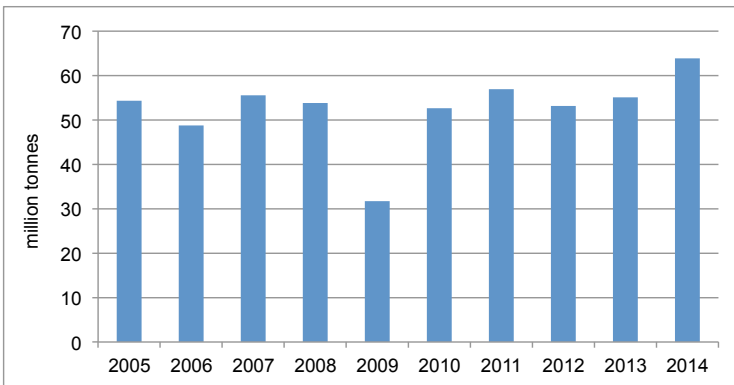
- Canada is the world’s largest potash producer.
- Canada’s production accounted for 27% of the world’s total potash production in 2014.
- Three countries (Canada, Russia, and Belarus) accounted for 63% of the world’s total potash production in 2014.

Figure 2. World Mine Production of Potash, 2014



Sources: Natural Resources Canada; International Fertilizer Industry Association; producers’ statistics and annual reports.

Figure 3. World Mine Production of Potash, 2005-14

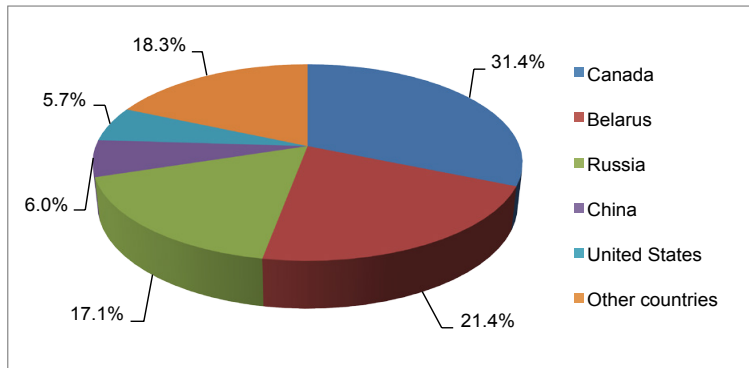


Sources: International Fertilizer Industry Association; Natural Resources Canada.

WORLD RESERVES

- Canada has the largest potash reserves in the world.
- Canada ranked first with 31% of the world's total reserves in terms of potassium oxide (K_2O) equivalent.
- Belarus was second with 21%.
- Russia was third with 17%.

Figure 4. World Potash Reserves, 2014

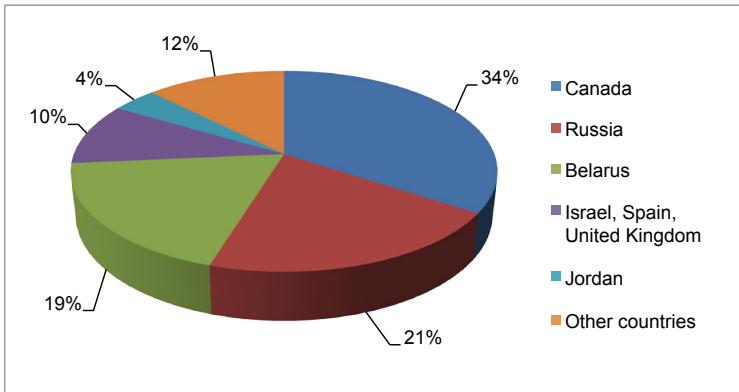


Source: U.S. Geological Survey.

TRADE

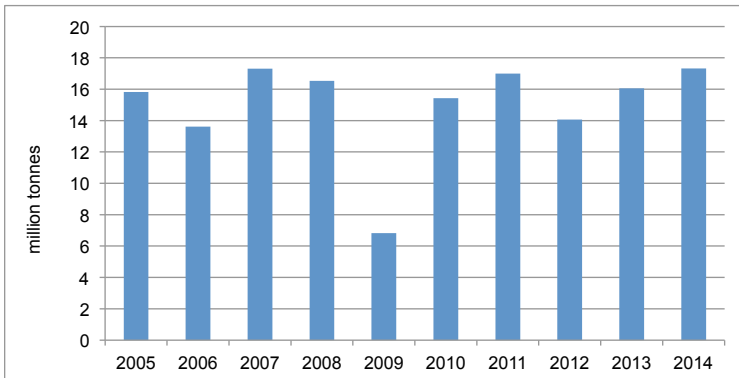
- Canada is the world's largest exporter of potash.
- In 2014, Canadian potash exports accounted for 34% of the world's total exports.
- An estimated 80% of global potash production is traded internationally.

Figure 5. World Potash Exports, by Country, 2014



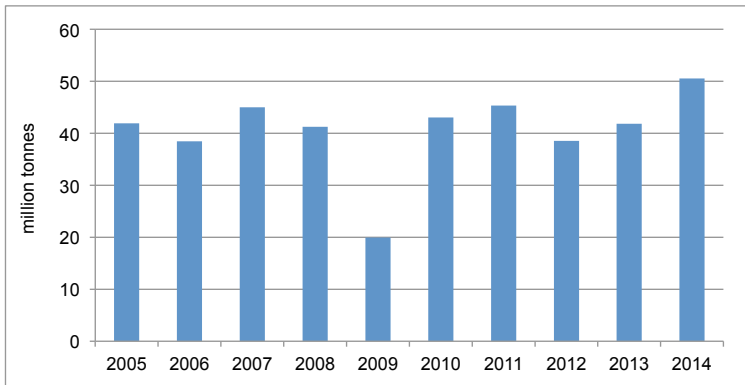
Sources: Natural Resources Canada; International Fertilizer Industry Association; producers' statistics and annual reports.

Figure 6. Canadian Potash Exports, 2005-14



Source: Natural Resources Canada.

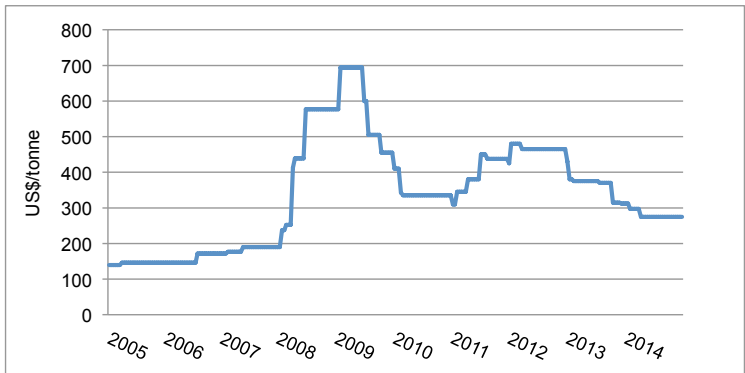
Figure 7. World Potash Exports, 2005-14



Sources: International Fertilizer Industry Association; Natural Resources Canada.

PRICES

Figure 8. Potash Price, f.o.b. Vancouver, Contract, Bi-Weekly, 2005-14



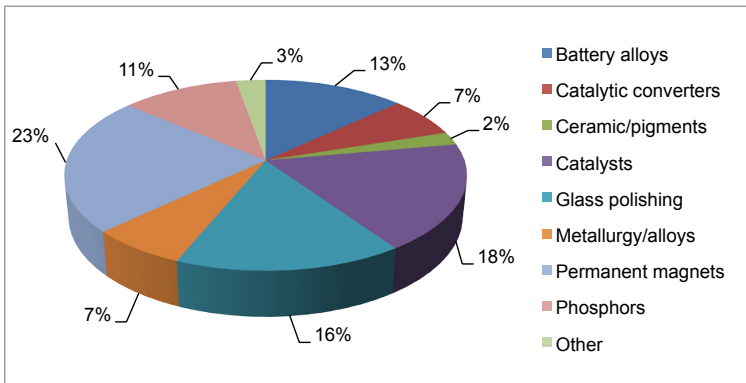
Source: FERTECON.
f.o.b. Free on board.

Rare Earth Elements

USES

- The manufacture of permanent magnets represents the largest and most important end use for rare earth elements (REE), accounting for close to 25% of total consumption, or some 117,000 tonnes (t), for 2013.
- REE are also widely used in high-technology and “green” products due to their luminescent and catalytic properties.
- REE are essential basic materials for national defence cutting-edge technology applications such as electric interference and confrontation, precision guidance and positioning, aviation, and aerospace.

Figure 1. REE Uses, 2013



Source: Adamas Intelligence, 2013.

Table 1. Canada-Based Advanced REE Exploration Projects, 2014
(containing a minimum of 10% “heavy” REE)

Project/Company	Location	Tonnes Per Year	Target Year	Total Million Tonnes	Total REE %	Heavy REE %
Two Tom, RE Minerals	Newfoundland and Labrador	5,000	2020	40.0	1.18	10
Clay Howells, RE Minerals	Ontario	5,000	2020	8.5	0.73	10
Eldor, Commerce Resources	Quebec	10,000	2020	422.0	1.90	10
Eco-Ridge, Pele Mountain	Ontario	4,000	2018	47.0	0.16	11
Foxtrot, Search Minerals	Newfoundland and Labrador	10,000	2020	10.0	1.10	20
Nechalacho, Avalon	Northwest Territories	10,000	2018	320.0	1.55	28
Zeus, Matamec	Quebec	6,000	2018	16.0	0.51	36
Strange Lake, Quest	Quebec	12,500	2018	300.0	0.93	38

Source: Natural Resources Canada.

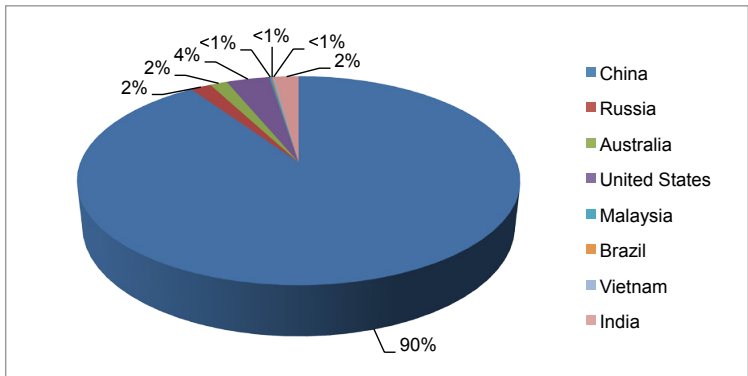
CANADIAN PRODUCTION

- While not a current producer of REE, Canada does host some of the most attractive advanced exploration projects in the world.
- The REE are categorized as either “light” or “heavy” based on their electron configuration. “Light” REE, produced in global abundance, are in surplus supply. Supplies of “heavy” REE, produced only in China, are limited.
- Many of Canada’s most advanced exploration projects contain high concentrations of the globally valued “heavy” REE used in high-technology and clean-energy applications.

WORLD PRODUCTION

- China is the world’s largest producer of REE, accounting for 90% of global annual production, or an estimated 135,000 t.
- The remaining 10% is shared among seven other countries.
- China remains virtually the only producer of the valued “heavy” REE.

Figure 2. Global Production of REE, by Country, 2014

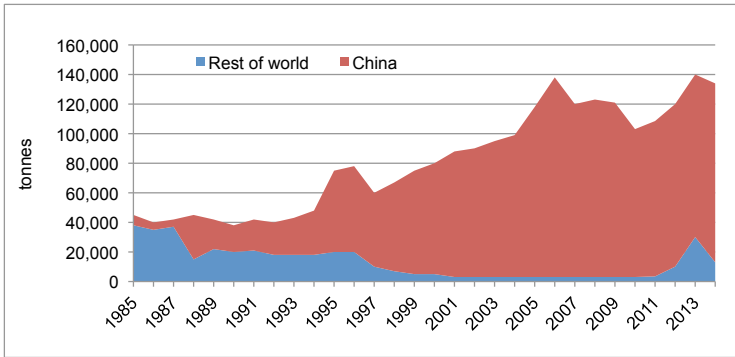


Source: Adamas Intelligence, 2014.

GLOBAL REE SUPPLY CHAIN, 1985-2014

- The United States was the world’s largest supplier of REE until the emergence of China in the late 1990s.
- China was virtually the world’s sole REE supplier until 2012 when the former U.S. producer, Molycorp Inc., and the Australian company, Lynas Corporation Ltd., commenced commercial production.

Figure 3. Global REE Supply, 1985-2014



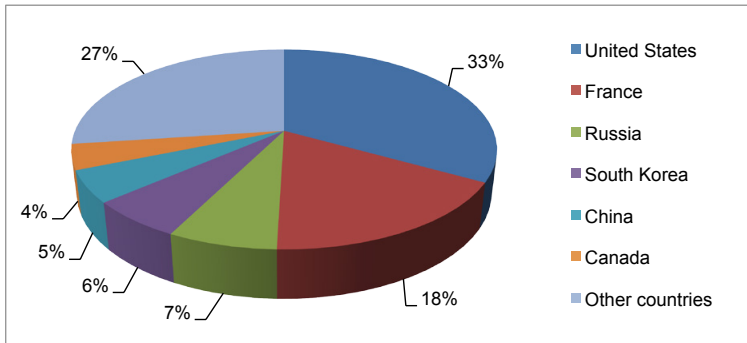
Source: Curtin University, 2014.

Uranium

USES

- The primary use of uranium (more than 99% of total use) is to produce fuel for nuclear power plants. Nuclear power generated 11% of the world's electricity in 2014.
- Other uses of uranium (less than 1%) include the production of medical isotopes and producing fuel for research reactors.
- Under Canada's Nuclear Non-Proliferation Policy, Canadian uranium can only be used for peaceful purposes.

Figure 1. Share of Global Nuclear Power Production, 2014

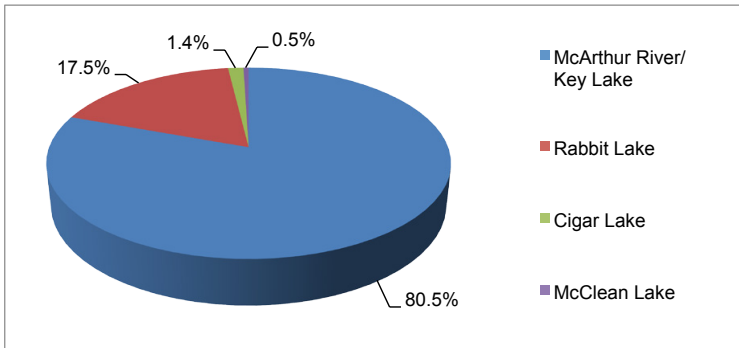


Source: World Nuclear Association.

CANADIAN PRODUCTION

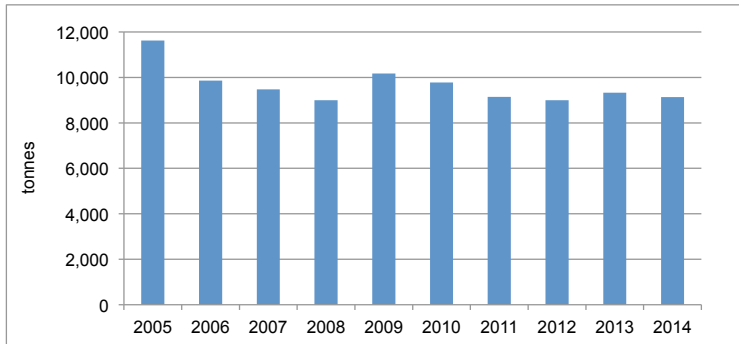
- Since 1996, all Canadian uranium production has been from mines in northern Saskatchewan.
- Saskatchewan's high-grade McArthur River mine is the world's largest in terms of annual production.
- In 2014, Canadian mines produced 9,136 tonnes of uranium metal (tU), or 16% of world production.
- In March 2014, the high-grade Cigar Lake mine began production, with 132 tU produced by the end of the year.
- When in full production, the Cigar Lake mine is expected to be the world's second largest uranium mine with an annual production of 6,900 tU.

Figure 2. Canadian Production of Uranium, by Mine/Mill, 2014



Source: Natural Resources Canada.

Figure 3. Canadian Production of Uranium, 2005-14

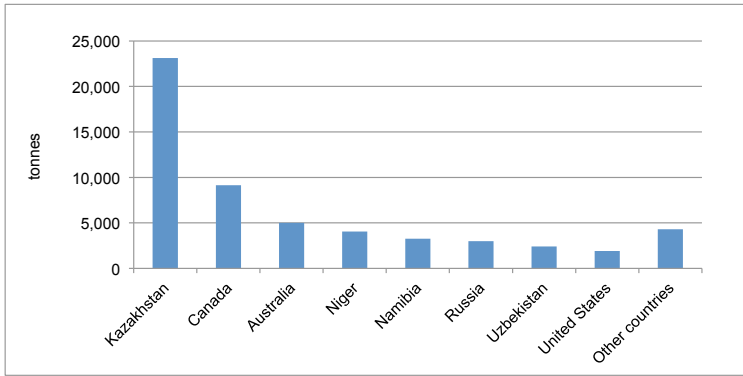


Source: Natural Resources Canada.

WORLD PRODUCTION

- In 2014, Kazakhstan was the world’s largest uranium producer, accounting for 41% of world production.
- Canada was second with 16%.
- Australia was third with 9%.
- Six countries accounted for 84% of world production in 2014.

Figure 4. World Production of Uranium, by Country, 2014

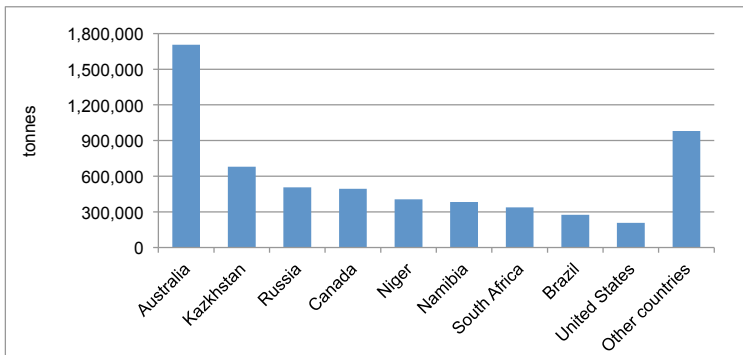


Source: World Nuclear Association.

WORLD RESOURCES

- In 2013, Australia ranked first with 1,706,000 tU, or 29% of the world’s identified uranium resources that are mineable at a cost of less than US\$130 per kilogram (kg) of uranium (US\$50 per pound of U₃O₈ [yellowcake]).
- Kazakhstan was second with 679,300 tU, or 12%.
- Russia was third with 505,900 tU, or 8.6%.
- Canada was fourth with 493,900 tU, or 8.4%.

Figure 5. Identified Uranium Resources, at a Cost of Less Than US\$130/kg, by Country, 2013



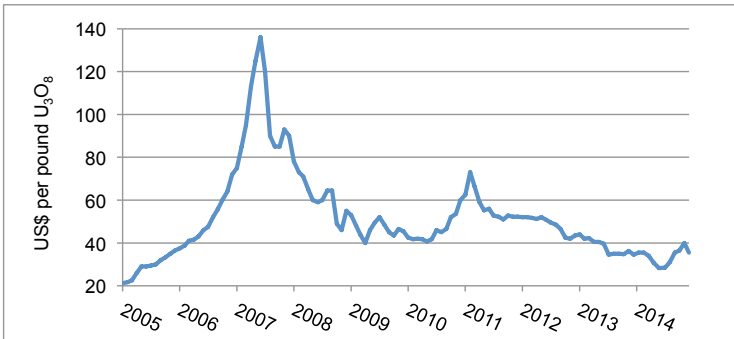
Source: OECD-NEA/IAEA.

TRADE

- Approximately 85% of Canada’s uranium production is exported. In 2014, these exports had a total value of over \$1.0 billion.
- A uranium refinery in Blind River, Ontario, processes Canadian and imported uranium concentrates to produce uranium trioxide, which is sent to a uranium conversion facility in Port Hope, Ontario.
- The Port Hope facility produces uranium dioxide, which is used to make fuel for CANDU pressurized heavy-water power reactors in Canada; it also produces uranium hexafluoride, which is exported to be enriched to make fuel for light-water reactors that are used throughout the world.

PRICES

Figure 6. Uranium, Spot Market Price, 2005-14



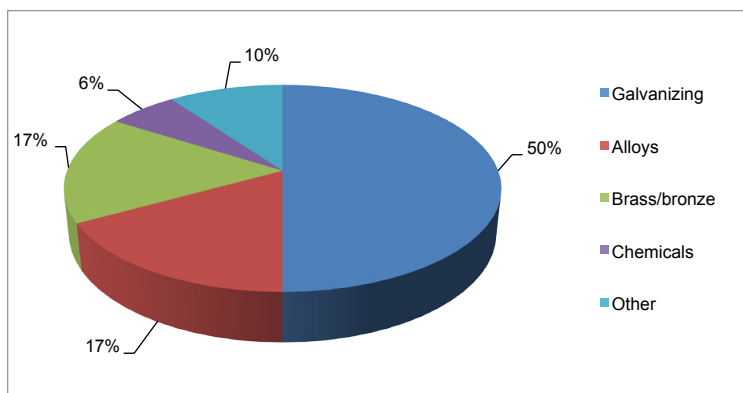
Source: The Ux Consulting Company, LLC (UxC).

Zinc

USES

- The primary use of zinc (50% of total use) is to protect iron and steel from rusting (galvanized steel).
- Die casting into shapes like door handles and faucets accounts for 17% of its use.
- Zinc is also alloyed with copper to make brass and with copper and tin to make bronze. Brass fittings are used in plumbing and heat exchange equipment.
- Zinc oxide is an ingredient in skin cream and is also used in the manufacture of tires.
- Zinc is an essential nutrient in the body that assists with nutrition and is also added to fertilizers to increase crop yields.

Figure 1. Zinc, Global Uses, 2014

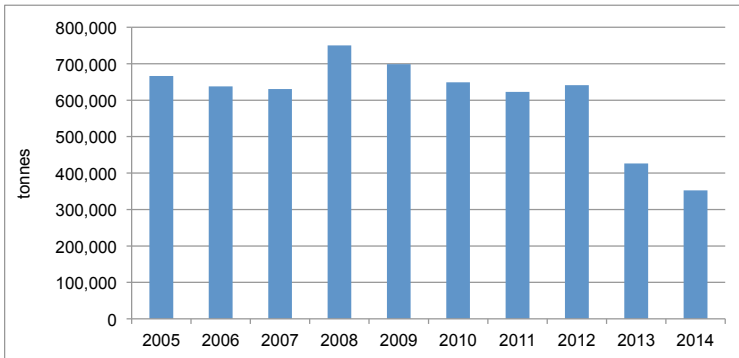


Source: International Lead and Zinc Study Group.

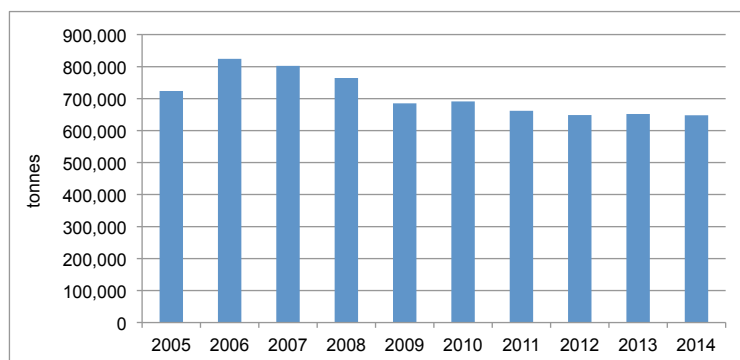
CANADIAN PRODUCTION

- In 2014, Canadian mines produced 352,745 tonnes (t) of zinc in concentrate, compared to 426,545 t in 2013, a 17% decrease.
- The decrease can be attributed to the closure at the end of 2013 of the Brunswick mine in New Brunswick and the Bellekeno mine in Yukon, and to lower zinc production during the year at the LaRonde mine in Quebec and the Kidd mine in Ontario.
- In 2014, zinc was produced from mines located in Yukon, British Columbia, Manitoba, Ontario, Quebec, and Newfoundland and Labrador.
- Refined zinc metal is produced at refineries in British Columbia, Manitoba, and Quebec. Production was 647,881 t in 2014, compared to 651,638 t in 2013.

Figure 2. Canadian Mine Production of Zinc, 2005-14



Source: Natural Resources Canada.

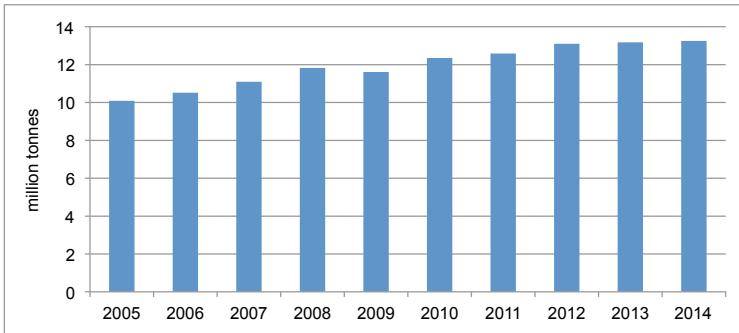
Figure 3. Canadian Refined Zinc Metal Production, 2005-14

Source: Natural Resources Canada.

WORLD PRODUCTION

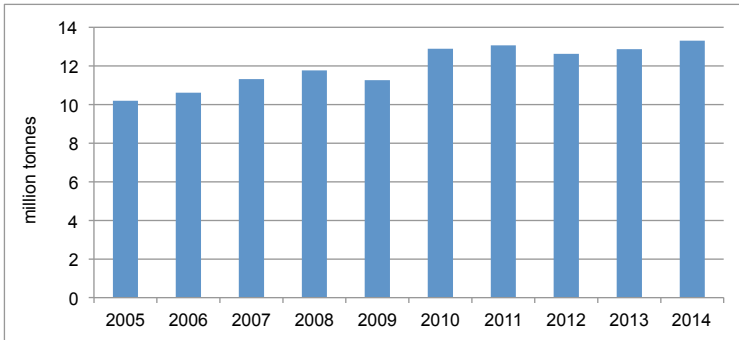
- World mine production of zinc reached 13.2 million tonnes (Mt) in 2014, while refined zinc metal production (which includes zinc from both mined sources and recovered secondary material) totaled 13.3 Mt.
- China was the world's largest producer of refined zinc metal, accounting for 41% of world production. Together with South Korea, India, Canada, and Japan, these top five countries accounted for 62% of world refined zinc metal production in 2014.
- Canada was the fourth-largest producer of refined zinc.

Figure 4. World Mine Production of Zinc, 2005-14



Source: International Lead and Zinc Study Group.

Figure 5. World Refined Zinc Metal Production, 2005-14

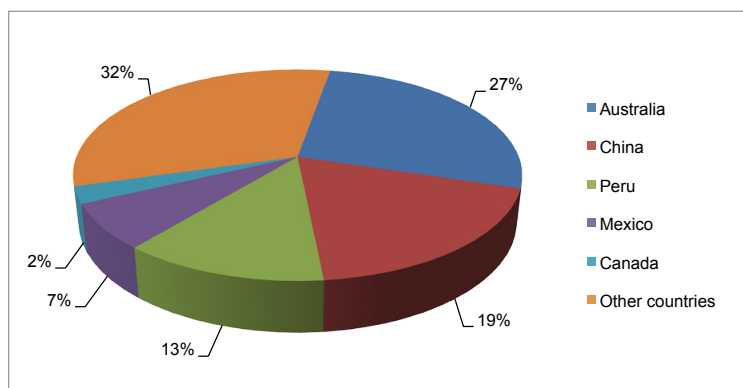


Source: International Lead and Zinc Study Group.

WORLD RESERVES

- In 2014, world total zinc reserves, as calculated by the U.S. Geological Survey, were an estimated 230 Mt.
- Australia ranked first with 62 Mt of contained zinc.
- China was second with 43 Mt.
- Peru was third with 29 Mt.
- Mexico was fourth with 16 Mt.
- Canada's reserves were estimated at 5.9 Mt (eighth overall).

Figure 6. World Zinc Reserves, by Country, 2014



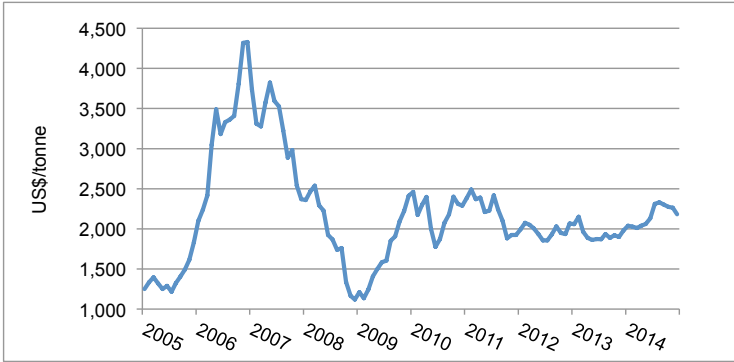
Source: U.S. Geological Survey.

TRADE

- Total exports of zinc and zinc products from Canada were valued at \$1.628 billion in 2014; imports were valued at \$754 million.
- Canadian smelters imported 487,000 t of zinc in concentrates in 2014, compared to 332,000 t in 2013. Concentrates were imported mainly from the United States, Burkina Faso, Namibia, and Peru.
- Canada exported 473,000 t of unwrought zinc and other zinc metal products in 2014, compared to 521,000 t in 2013. Zinc metal was exported primarily to the United States (94%) with minor amounts shipped to Taiwan, Hong Kong, and Malaysia.

PRICES

Figure 7. Zinc, Monthly Average Three-Month Prices, 2005-14



Source: London Metal Exchange.

RECYCLING

- Approximately 25% of global zinc demand is supplied from recycled materials.
- Sources of recycled zinc include scrap galvanized steel and zinc contained in batteries.
- Zinc contained in products such as galvanized steel has a long service life, which affects the amount of material available to the marketplace for recycling in any given year.

Statistical Annex

Table 1. Canada's Mining and Mineral Processing Sector Real Gross Domestic Product, 2005-14

Year	Mining and Quarrying (Except Oil and Gas)	Nonmetallic Mineral Product Manufacturing	Primary Metal Manufacturing	Fabricated Metal Product Manufacturing	Total Mining and Mineral Processing
	(2007 \$ billions)				
2005	23.4	6.3	15.7	14.0	59.5
2006	22.2	6.4	15.7	14.3	58.6
2007	23.4	6.5	15.4	14.3	59.6
2008	23.7	6.2	15.1	13.1	58.1
2009	18.1	5.2	11.4	11.2	45.9
2010	20.0	5.3	13.3	11.6	50.1
2011	22.3	5.3	13.9	12.6	54.2
2012	21.9	5.4	14.2	13.4	54.8
2013	22.6	5.1	14.3	13.0	55.0
2014	23.9	5.3	14.6	13.3	57.2

Source: Statistics Canada, CANSIM Table 379-0031.

Note: Values at basic prices in 2007 constant dollars.

Table 2. Canadian Mineral Industry Employment, 2006-14 (p)

Year	Mining and Quarrying (Except Oil and Gas)	Mining-Related Support Activities	Nonmetallic Mineral Product Manufacturing	Primary Metal Manufacturing	Fabricated Metal Product Manufacturing	Total Mining, Mining-Related Support Activities, and Mineral Processing
2006	47,115	15,555	56,410	88,050	192,075	399,205
2007	51,780	18,785	57,725	81,715	192,005	402,010
2008	56,060	21,980	54,780	82,315	181,910	397,045
2009	48,335	17,880	52,215	64,325	163,830	346,585
2010	52,025	22,005	54,475	69,260	162,355	360,120
2011	55,245	29,565	53,615	77,460	165,940	381,825
2012	56,630	30,070	53,745	75,110	169,955	385,510
2013	63,140	29,860	52,385	73,435	165,315	384,135
2014 (p)	63,590	27,700	53,110	69,625	162,430	376,455

Source: Statistics Canada, CANSIM Table 383-0031.

(p) Preliminary.

Note: Numbers may not add to totals due to rounding.

Table 3. Canadian Mineral Industry Average Annual Total Compensation Per Job, in Dollars, 2006-13

Year	Mining and Quarrying (Except Oil and Gas)	Mining-Related Support Activities	Nonmetallic Mineral Product Manufacturing	Primary Metal Manufacturing	Fabricated Metal Product Manufacturing	Canadian All-Industry Average
2006	91,778	93,205	60,718	82,610	56,756	47,004
2007	91,525	97,652	61,864	87,249	58,348	48,539
2008	96,930	98,628	63,300	85,196	60,984	49,781
2009	105,284	98,539	62,044	86,981	59,986	50,459
2010	106,097	97,481	62,065	88,490	58,912	51,117
2011	108,965	102,449	62,937	87,270	61,777	52,905
2012	117,343	101,102	65,471	91,117	64,041	54,706
2013	109,655	99,542	67,023	90,695	66,362	55,969

Source: Statistics Canada, CANSIM Table 383-0031.

Note: Numbers may not add to totals due to rounding.

Table 4. Capital Investment in Canada's Mineral Industry, 2006-15 (si)

Year	Mining and Quarrying (Except Oil and Gas)	Nonmetallic Mineral Product Manufacturing	Primary Metal Manufacturing	Fabricated Metal Product Manufacturing	Mining and Mineral Processing
	(\$ billions)				
2006	4.9	0.7	1.2	0.7	7.5
2007	5.8	0.8	1.3	0.7	8.6
2008	7.3	0.7	1.6	0.7	10.4
2009	6.2	0.6	0.9	0.8	8.5
2010	9.1	0.8	1.8	0.6	12.2
2011	12.2	0.7	2.9	0.7	16.5
2012	16.9	0.6	3.9	0.5	21.9
2013	15.1	0.5	3.5	0.6	19.6
2014 (p)	11.1	1.0	2.2	0.8	15.0
2015 (si)	10.9	1.2	2.4	0.9	15.3

Sources: Natural Resources Canada; Statistics Canada, CANSIM Table 029-0045.
 (p) Preliminary; (si) Spending intentions.

Table 5. Value of Canadian Mineral Trade, by Trading Partner, 2014

Trading Partner	Total Exports (\$ billions)		Total Imports		Balance of Trade
	Domestic Exports	Total Exports	Total Imports	Balance of Trade	
United States	46.7	49.5	40.0	9.5	
EU-27	17.7	18.2	7.5	10.7	
China	5.2	5.3	8.0	-2.8	
Japan	3.5	3.5	1.1	2.4	
Hong Kong	2.7	2.7	0.1	2.7	
South Korea	2.2	2.3	1.1	1.2	
Norway	1.8	1.8	0.2	1.7	
India	1.3	1.3	0.9	0.4	
Brazil	1.0	1.0	1.4	-0.4	
Mexico	1.0	1.0	3.7	-2.7	
Other countries	6.2	6.5	15.5	-8.9	
Total Canada	89.3	93.1	79.4	13.7	

Sources: Natural Resources Canada; Statistics Canada.

Notes: Mineral trade includes coal. Numbers may not add to totals due to rounding. European Union (EU-27): Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden, and the United Kingdom.

Table 6. Value of Canadian Mineral Export Trade, by Commodity, 2013 and 2014

Commodity	2013		2014	
	(\$ billions)			
Gold	17.7		17.9	
Iron and steel	12.1		13.7	
Aluminum	8.8		9.8	
Copper	6.1		7.0	
Miscellaneous metal products	5.4		5.8	
Nickel	4.7		5.4	
Potash and potassium compounds	5.8		5.2	
Coal	5.8		4.5	
Iron ore	4.6		4.4	
Diamonds	2.1		2.5	
Zinc	1.5		1.6	
Uranium and thorium	2.0		1.4	
Silver	2.3		1.3	
All other minerals	7.9		8.8	
Total	86.8		89.4	

Sources: Natural Resources Canada; Statistics Canada.

Note: Numbers may not add to totals due to rounding.

Table 7. Mining, Mining-Related Support Activities, and Mineral Processing Business Expenditures on Research and Development, 2006-15 (p)

Year	Mining, Quarrying (Except Oil and Gas), and Mining-Related Support Activities	Nonmetallic Mineral Product Manufacturing	Primary Metal Manufacturing	Fabricated Metal Product Manufacturing	Total Mining, Mining-Related Support Activities, and Mineral Processing
	(\$ millions)				
2006	68	76	x	230	..
2007	67	78	351	258	754
2008	46	66	338	260	710
2009	108	83	265	285	741
2010	...	76	...	234	..
2011	138	78	215	221	652
2012	152	63	208	197	620
2013 (p)	191	60	238	188	677
2014 (p)	...	58	133	205	..
2015 (p)	...	60	140	199	..

Source: Statistics Canada, CANSIM Table 358-0024.

.. Not available; ... Too unreliable to be published; (p) Preliminary; x Suppressed to meet the confidentiality requirements of the *Statistics Act*.

Table 8. Average Annual Prices of Select Commodities, 2007-14

Commodity	U.S. Currency	2007	2008	2009	2010	2011	2012	2013	2014
Copper	¢/lb	322.83	315.47	233.67	341.75	400.10	360.58	332.29	312.44
Nickel	\$/lb	16.88	9.57	6.65	9.89	10.38	7.89	6.81	7.65
Zinc	¢/lb	147.03	85.01	96.25	97.99	99.47	88.35	86.64	98.05
Lead	¢/lb	116.98	115.32	77.95	97.42	108.92	93.24	97.16	95.04
Molybdenum	\$/lb	29.91	28.42	10.91	15.61	15.33	12.73	10.34	11.39
Gold	\$/troy oz	696.66	871.67	972.98	1,224.66	1,568.58	1,668.81	1,411.06	1,266.12
Silver	\$/troy oz	13.41	15.00	14.69	20.20	35.60	31.21	23.86	19.07
Platinum	\$/troy oz	1,304.79	1,576.40	1,204.05	1,610.13	1,720.11	1,551.89	1,486.73	1,384.57
Palladium	\$/troy oz	354.66	352.19	263.57	526.38	733.63	644.34	725.27	802.95
Uranium (U ₃ O ₈)	\$/lb	99.33	61.71	46.06	46.84	56.37	48.40	38.17	33.21
Coal, metallurgical	\$/t f.o.b.	98.44	209.51	194.92	199.79	267.57	193.38	146.59	125.67
Coal, thermal	\$/t f.o.b.	50.51	97.37	84.45	93.61	105.34	97.99	91.72	85.70
Iron ore	\$/t	36.63	61.57	79.99	146.72	167.79	128.53	135.36	96.84
Potash	\$/t f.o.b.	174.09	381.34	539.37	335.35	394.49	431.61	364.22	301.75

Sources: Platts Metals Week for base metals, molybdenum, and precious metals (base metals are based on London Metal Exchange [LME] Settlement prices, molybdenum on the MW Means, gold on the London Final, silver on Handy+Harman, and platinum and palladium on the PM Fix); Cameco Corporation for uranium (uranium price is the U.S. spot price); Indexmundi (www.indexmundi.com) for iron ore; metallurgical coal, thermal coal; and potash prices are based on the realized price of Canadian potash exports to offshore markets and are calculated by Natural Resources Canada. f.o.b. Free on board; lb Pound; oz Ounce; t Tonne.