Natural Resources Canada | Ressources naturelles Canada

54th ANNUAL GENERAL MEETING: SASKATCHEWAN MINING ASSOCIATION

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Canada-US Joint Action Plan on Critical Minerals Collaboration

Canada

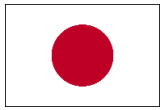
Context – Allies are Mobilizing to Secure Supply Chains

UNITED STATES

A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals aims to secure access to supplies of critical minerals to **support national defence and security objectives**. The US is actively seeking international cooperation to diversify supply, urging global partners to come together to address the issue.

EUROPEAN UNION

The **EU Raw Materials Strategy** aims to secure access to responsible and sustainable critical minerals to fuel the low carbon transition. The EU wants to ensure the independence of its high-tech industries, to advance the transformation of industry and society to carbon neutrality and keep value chains in Europe.



JAPAN

Given the significance of critical minerals for their respective high-tech industries, Japan is wary of risks from the domination of supply from non-market economies and is seeking to minimize dependence by diversifying supply, investing in R&D and recycling, and international cooperation with producing nations, including Canada.

AUSTRALIA

Australia's Critical Mineral Strategy aims to promote investment in processing, innovation and infrastructure. The Government of Australia has made a series of critical minerals-related policy and funding announcements recently, and is pursuing an aggressive strategy of cooperation with the US.

CHINA

China has become the leading producer of minerals vital to the modern economy, including:

Lithium	59%
Graphite	70%
Cobalt	36%
Gallium	95%
Vanadium	56%
Rare Earth Elements	80%

Canada-U.S. Joint Action Plan on Critical Minerals

On January 9, 2020 the federal governments in Canada and the United States announced the finalization of our Joint Action Plan on Critical Minerals Collaboration.

- The announcement delivers on the June 2019 commitment by Prime Minister Trudeau and President Trump to improve critical mineral security and ensure the future competitiveness of Canadian and U.S. minerals industries.

- Areas of collaboration include:
  - Industry engagement
  - Supply chain diversification
  - Defense supply chains
  - Data exchange
  - Multilateral cooperation

U.S. Interests

Commodity	Net Import Reliance (%)	Major import sources (2013-16), share of net import reliance (%)[1]	Imports 2017[e]
ARSENIC (ArO_3)	100	Morocco, 52; China, 41; Belgium, 6; other,1	7300
CESIUM	100	Canada, 100	NA
FLUORSPAR	100	Mexico, 71; China, 8; South Africa, 8; Vietnam, 5; other, 8	460,000
GALLIUM	100	China, 33; Germany, 23; United Kingdom, 22; Ukraine, 17; other, 5	22
GRAPHITE (natural)	100	China, 35; Mexico, 31; Canada, 17; Brazil, 8; other, 9	50,000
INDIUM	100	Canada, 23; China, 22; France, 11; Republic of Korea, 11; other, 33	120
MANGANESE	100	South Africa, 29; Gabon, 22; Australia, 14; Georgia, 11; other, 24	310,000
NIOBIUM	100	Brazil, 72; Canada, 18; Russia, 3; other, 7	11,300
RARE EARTHS	100	China, 78; Estonia, 6; France, 4; Japan, 4; other, 8	12,000
RUBIDIUM	100	Canada, 100	NA
SCANDIUM	100	China,100	NA
STRONTIUM	100	Mexico, 87; Germany, 11; China, 2	17,000
TANTALUM	100	Brazil, 40; Rwanda, 26; Australia, 8; Canada,7; other, 19	1300
VANADIUM	100	Czechia, 32; Austria, 22; Canada, 19; Republic of Korea, 18; other, 9	11,500
BISMUTH	96	China, 74; Belgium, 12; Peru, 3; other, 7	2400
URANIUM (U_3O_8 equivalent)[e, 2]	93	Canada, 33; Australia, 19; Russia, 16; Kazakhstan,11; other, 14	21,000
POTASH (K_2O equivalent)	92	Canada, 76; Russia, 7; Israel, 3; Chile, 2; other, 4	5,700,000
TITANIUM MINERAL CONCENTRATES (TiO_2 content)[3]	91	South Africa, 34; Australia, 26; Canada, 13; Mozambique, 10; other, 8	1,050,000
ANTIMONY	85	China, 60; Belgium, 9; Bolivia, 5; other,11	24,000
RHENIUM	80	Chile, 69; Belgium, 3; Germany, 3; Poland, 2; other, 3	34
BARITE	>75	China, 52; India, 10; Mexico, 7; Morocco, 5; other, 1	2,220,000
BAUXITE	>75	Jamaica, 35; Brazil, 22; Guinea, 16; Guyana, 2	4,300,000
TELLURIUM	>75	Canada, 43; China, 22; Belgium, 5; Philippines, 3; other 2	113
TIN	75	Peru, 19; Indonesia, 15; Malaysia, 15; Bolivia, 13; other, 13	32,400
COBALT	72	Norway, 12; China, 11; Japan, 8; Finland, 6; other, 35	12,100
CHROMIUM	69	South Africa, 26; Kazakhstan, 7; Russia, 4; other, 32	600,000
PLATINUM-GROUP METALS	57	South Africa, 19; Russia, 10; Italy, 5; United Kingdom, 5; other, 18	508
TITANIUM (sponge metal)[3]	53	Japan, 41; China, 4; Kazakhstan, 3; Ukraine, 3; other, 2	23,000
GERMANIUM	>50	China, 31; Belgium, 12; Russia, 3; Germany, 2; other, 2	23
HAFNIUM	>50	Germany, 23; France, 16; United Kingdom, 8; China, 3	160
LITHIUM	>50	Chile, 25; Argentina, 24; China, 1	3430
TUNGSTEN	>50	China, 17; Canada, 5; Bolivia, 5; Germany, 4; other, 19	13,900
ZIRCONIUM MINERAL CONCENTRATES (ZrO_2 content)[3]	<50	South Africa, 30; Australia, 11; Senegal, 7; other 2	28,000
ZIRCONIUM[4]	<50	China, 34; Germany, 8; Japan, 6; other, 2	1080
MAGNESIUM METAL	<25	Israel, 7; Canada, 6; China, 3; United Kingdom, 2; other, 7	43,000
BERYLLIUM	14	Kazakhstan, 7; Japan, 2; Brazil, 1; United Kingdom, 1; other 3	49
HELIUM (reported in million cubic meters of He)[4]	Net exporter		21

[e]Estimated. NA Not available. Source: U.S. Geological Survey, Minerals Commodity Summaries 2018 and imports are metric tons unless otherwise noted. [1]In descending order of import share. May include combined data from other countries that are not listed. [2]Source: U.S. Energy Information Administration, Uranium Marketing Annual Report and Domestic Uranium Production Report—Annual. (Accessed September 11, 2018, via https://www.eia.gov/uranium/marketing/ and https://www.eia.gov/uranium/production/annual/.) [3]Multiple rows are shown for titanium and zirconium to reflect different material forms and import sources. [4]The United States exports more helium than it imports. 95% of U.S. imports are from Qatar. Helium imports are in million cubic meters.

U.S. Policy Drivers

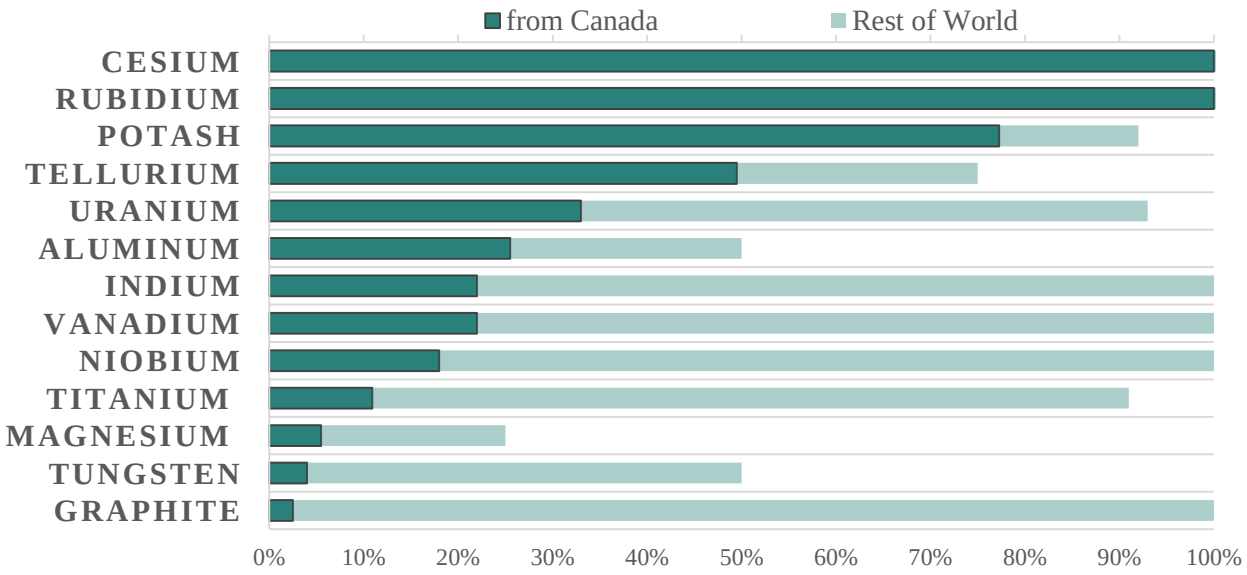
- Secure defence industrial base
- Overreliance on imports from non-market economies
- Threat of Chinese REE export restrictions
- Economic and other benefits associated with increased domestic production

Canada is a Secure Supplier

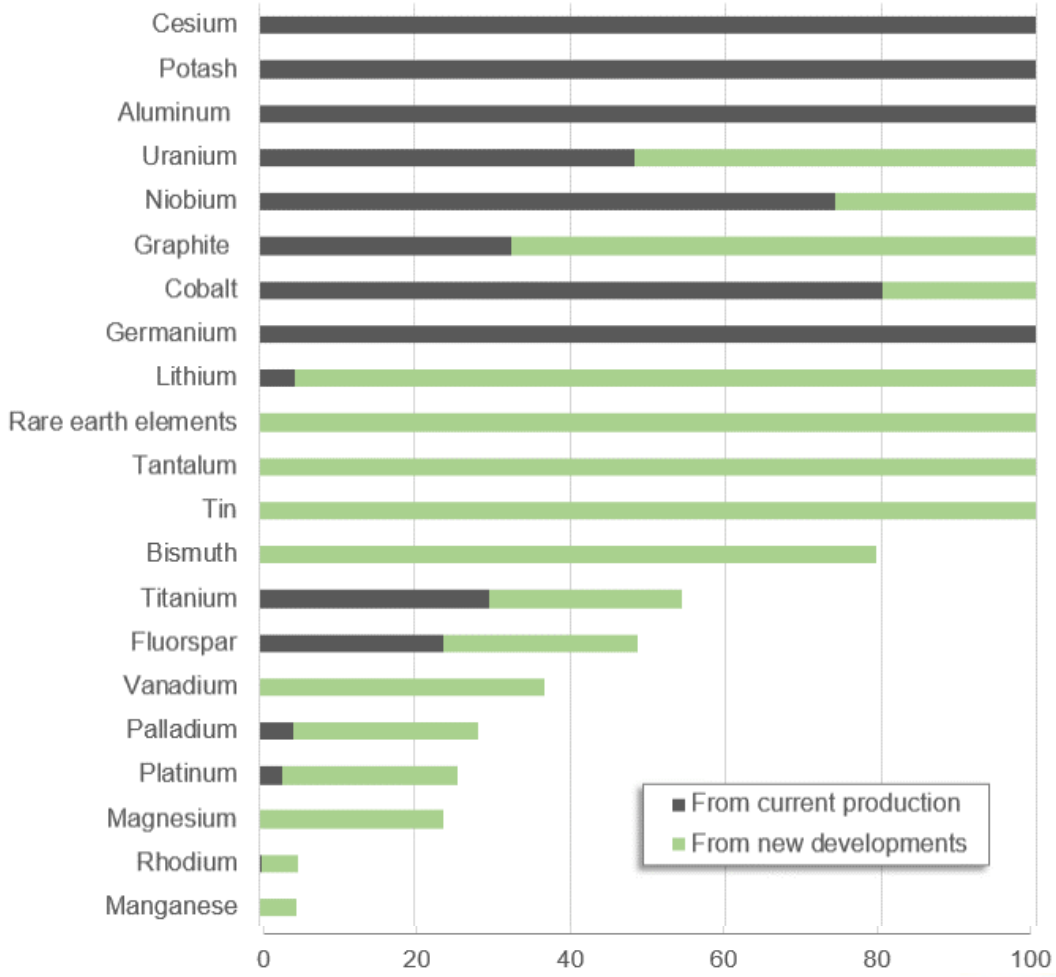
Canada is an important supplier for 13 of the 35 U.S. critical minerals

Including uranium, potash, niobium, and graphite

U.S. Import Reliance of Selected Critical Minerals



*Canada's **Supply Potential by 2030** for minerals deemed critical by the U.S.:*



A Strategic Opportunity for Canada

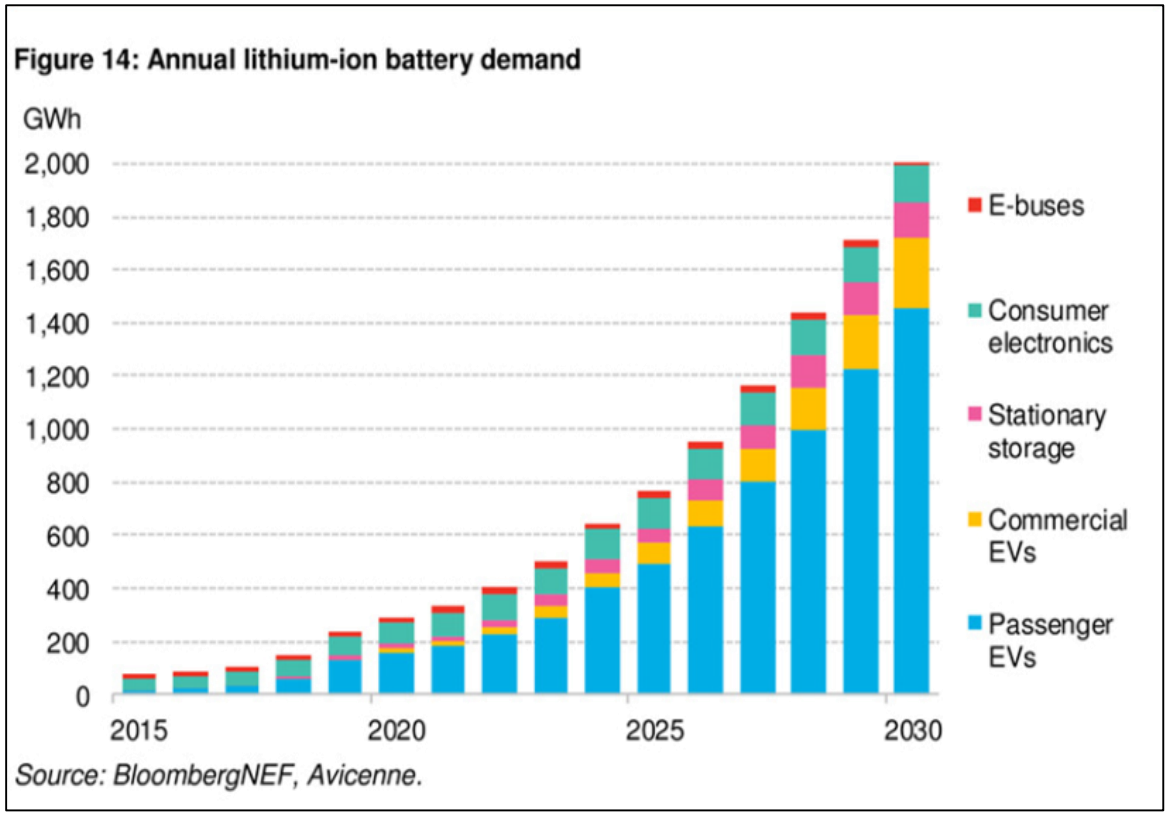
- **International allies are looking to Canada to secure global supply chains.**

- **This is an opportunity for Canada to position itself…**

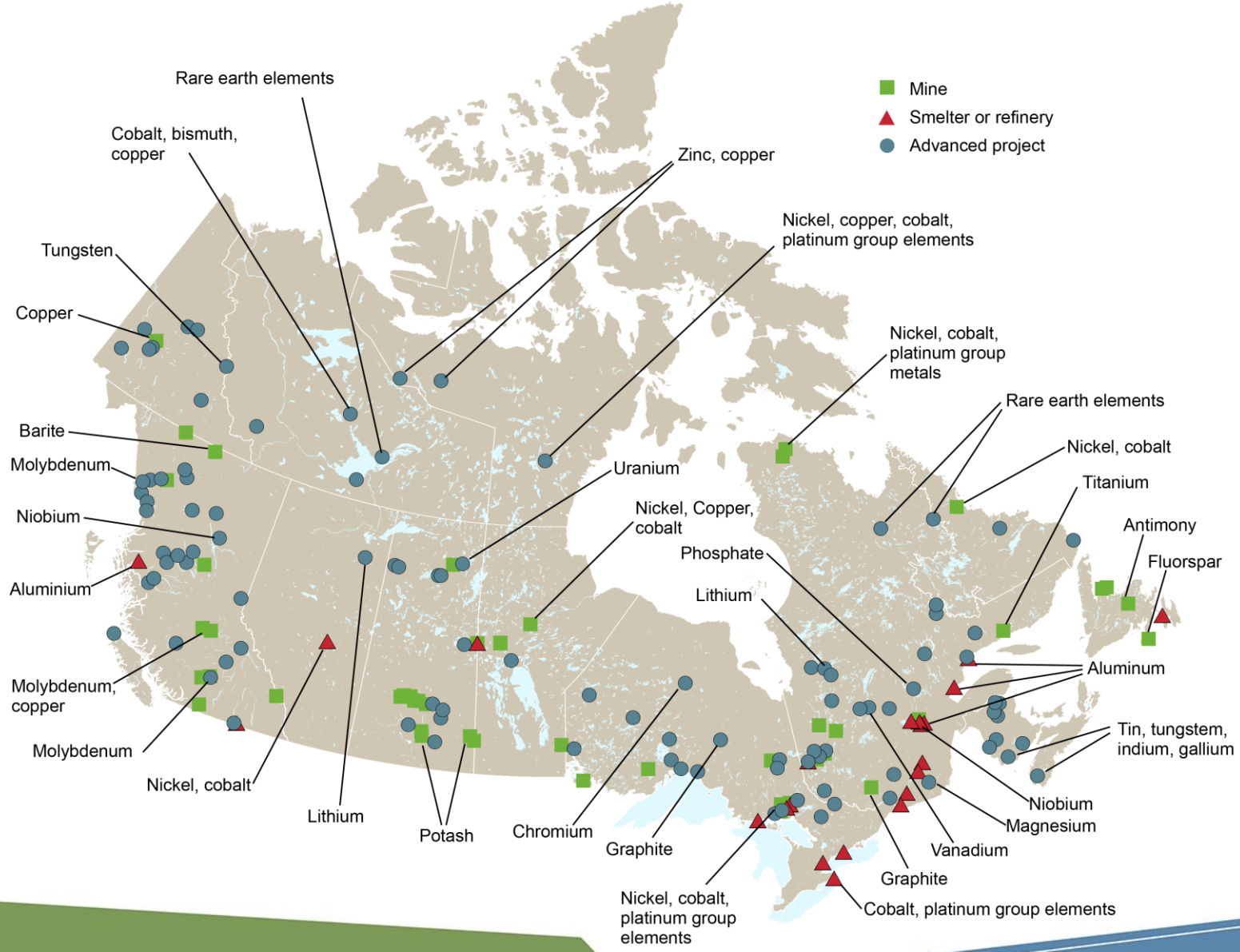
  - A supplier of critical minerals
  - An important contributor to geostrategic dialogue, including on issues of defence and national security
  - An attractive partner in efforts to build secure global supply chains

- **…. attracting investment into Canadian exploration mining projects, and building value chains in strategic downstream industries**:

  - Aerospace and defence
  - Electric vehicles, advanced batteries and electric motors
  - Energy storage
  - Small modular reactors
  - Advanced manufacturing and materials
  - Renewable energy and other clean technologies

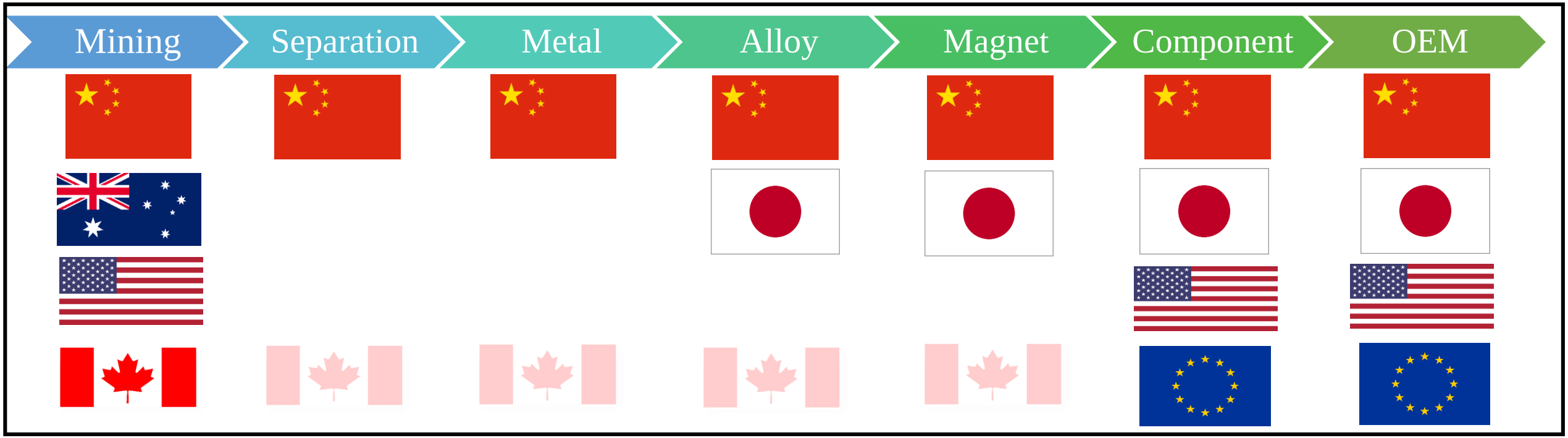


Canada's Critical Mineral Potential



Building Value Downstream: An REE example

- In rare earth elements (REE), China has capabilities at every step along the value chain
- The U.S., EU and Japan have mainly downstream capabilities, particularly in advanced manufacturing
- While not a current producer of REEs, Canada has significant reserves and resources that could put us on the map if we can build the necessary capabilities to position Canada along this value chain
- International cooperation is a strategy to mitigate supply chain risks



NRCan Critical Minerals Task Force

OBJECTIVES

BUILDING CRITICAL MINERAL VALUE CHAINS & DOWNSTREAM PROCESSING, PRODUCTS AND TECHNOLOGIES

POSITIONING CANADA AS A SUPPLIER WITH INTERNATIONAL ALLIES

WORKING WITH GLOBAL PARTNERS ON MINERALS AND METALS FOR THE LOW CARBON AND DIGITALIZED ECONOMY

VISION

Canada is home to competitive supply chains for critical minerals and value added products, processes and technologies.
Canada is strategically positioned as a secure and responsible source of supply of the minerals and metals essential to the low carbon, digitalized economy

AREAS OF WORK

- Market studies and analysis
- Industry engagement
- International engagement
- Provincial and territorial engagement
- Development of policy options

Work includes identifying short- and long-term strategies for Canada, including mechanisms for collaboration with federal, provincial and territorial governments, industry and the U.S., EU, Japan & Australia to seize opportunities.

Critical Minerals Industry Day – What We Heard

- Canada has a limited window of opportunity to capitalize on global demand for critical minerals before competition intensifies.
- We need to create momentum, identifying strategic projects and focusing investments.
- A critical minerals list would orient a broader Canadian strategy.
- A industrial ‘roadmap’ is needed to build the manufacturing base that will create demand for critical minerals and value added products.
- Tax and financial tools and government programs must be accessible to critical minerals projects.
- Close cooperation between stakeholders will be key to understand industry challenges, align federal programs and ensure complementarity with provincial-territorial efforts.

A “What We Heard” report summarizing discussions will be complete in March 2020.

Questions

- Do you have thoughts on **how Canada might build value chains in strategic industries**, and **attract manufacturing that would drive critical mineral demand**?
- How might the minerals and metals sector **engage downstream industries in the critical minerals conversation**?
- How can Government best **engage industry in next steps**?
- Do you have perspectives on how industry and Government can **advance collaboration with the U.S., EU and Japan**? Or, on how **federal, provincial and territorial governments can work together with industry**?