

# CRITICAL AND STRATEGIC MINERALS IN QUÉBEC

New Wealth and Business Opportunities



# QUÉBEC, A PARTNER IN YOUR SUCCESS

**The gouvernement du Québec has adopted a plan to promote the development of critical and strategic minerals in order to encourage investments within its territory, meet the growing demand for these resources and play an active role in the global energy and technological transition.**

The rapid development of sectors such as new technologies, telecommunications, aerospace, energy storage, medical equipment and renewable energy production has increased the demand for critical and strategic minerals (CSMs). Since there are no commercially available substitutes for these minerals, they are of major economic importance to key economic sectors and present a high supply risk.

Québec works in partnership with businesses to ensure their success at the local, regional, national and international levels. In addition to the opportunities associated with resource extraction in Québec, the development of new products from processed or recycled critical and strategic minerals offers many promising business prospects.

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# WHY CHOOSE QUÉBEC?

## Huge potential, a variety of projects

Québec, with its rich and promising territory, offers tremendous potential for discovering, mining and developing CSMs.

### Québec represents:

- + The largest Canadian province (1.7 million square kilometres)
- + The most diverse reservoir of mineral resources in Canada
- + The upcoming first producer of scandium oxide in North America
- + World-class deposits of rare earths and vanadium
- + More than 180,000 active mining titles covering over 9 million hectares
- + More than half of Canada's lithium projects

### A well-established industry which notably includes:

- + An active copper foundry and refinery
- + The second-largest production of niobium in the world, the only one in the Northern Hemisphere
- + A third-place ranking in Canada for the production of nickel, and a fourth-place ranking for the production of copper and zinc
- + An active zinc refinery
- + A graphite mine and a mining project that will produce high purity graphite
- + A titanium mine



## An attractive business environment



A competitive, reliable and modern mining regime favouring investment



Measures supporting research and innovation



Several tax incentives:

- + The Capital Natural Resource and Energy Fund
- + Refundable tax credits
- + Deductions and allowances in the mining tax regime



Technological and scientific expertise, know-how, specialized equipment manufacturers and suppliers, a skilled workforce and several applied research centres

### Two allowances specifically support mining development in the northern regions:

- + An exploration allowance under which exploration expenses can be increased by 25%
- + An additional allowance to cover the high costs associated with the entry into production in northern Québec



A stable political context and predictable legal framework



Recognized practices to promote social acceptability and support the sustainable and profitable development of the CSM sector, including standards and tools to protect the environment, the health and safety of workers as well as local and Indigenous communities



Reliable support for the mining industry via access to several types of capital:

- + Caisse de dépôt et placement du Québec
- + Fonds de solidarité (FTQ)
- + Investissement Québec
- + Ressources Québec
- + SOQUEM
- + SIDEX
- + Société de développement de la Baie-James



An advantageous geographic position:

- + Close to industry and major population pools
- + With deep water ports facilitating access to the U.S., European and Asian markets



Modern treaties and partnerships with Indigenous nations

### QUÉBEC'S ADVANTAGE: CLEAN, RENEWABLE, LOW-COST ENERGY

Québec's energy sector has a significant advantage. The province is the fourth-ranked producer of hydroelectricity in the world, and provides 52% of Canada's hydroelectricity. 99.8% of the electricity produced in Québec comes from clean, renewable and reliable sources.



## Effective tools

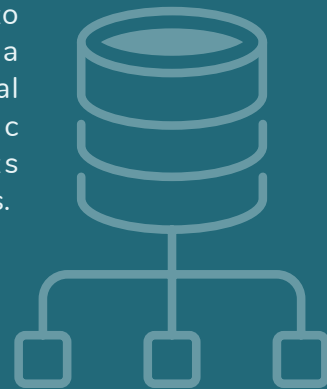
The gouvernement du Québec assists mining proponents from the beginning of their projects through effective management of knowledge and mining rights. It offers two main tools for this:

- + SIGÉOM: Provides easy access to a public geoscientific database [sigeom.mines.gouv.qc.ca](http://sigeom.mines.gouv.qc.ca)
- + GESTIM: Provides easy access to mining titles and online designation [gestim.mines.gouv.qc.ca](http://gestim.mines.gouv.qc.ca)

Another source of support is the Bureau de coordination des droits [Rights Coordination Office], which was created to assist companies and ensure better government coordination in the process of granting permits and authorizations.

### SIGÉOM: A VALUABLE ASSET FOR MINERAL EXPLORATION COMPANIES

SIGÉOM (Québec's geomining information system) is recognized worldwide for the quality and accessibility of its information. It consolidates geoscientific data from the gouvernement du Québec, public agencies, the mineral exploration industry and the university research sector. It provides free access to more than a million technical and scientific measurements and observations.



# OUR PRIORITIES FOR THE DEVELOPMENT OF THE CSM SECTOR

## Investments totalling \$90M in order to develop critical and strategic minerals by 2025

### + Knowledge acquisition

Accelerate investments in geoscientific knowledge acquisition and exploration to reveal Québec's full potential

### + Infrastructure

Consolidate the transportation, energy and telecommunications networks

### + Research and development

Provide financial support to innovative projects in exploration, transformation, recycling, artificial intelligence and R&D

### + Local investments

Stimulate investments in Québec and assist companies with their development projects

## Coordinating with other government actions to go further

### \$1B

for the development of structuring projects from the [fonds Capital ressources naturelles et énergie](#). Capital contribution of \$1M to \$100M for projects valued at more than \$5M.

### \$55M

set aside for the [Stratégie québécoise de développement de la filière batterie](#) [Québec Battery Industry Development Strategy].

### \$6.7B

in investments in the [2030 Plan for a Green Economy](#).

### \$10M to \$150M

in equity capital or in the form of a loan from [Ressources Québec](#).

# APPENDIX 1 CSM DEVELOPMENT IN QUÉBEC: DEPOSITS, DEVELOPMENT PROJECTS AND MINES

## Graphite

Several graphite projects are underway in Québec.

- |   |   |
|---|---|
| <b>1</b> <b>Lac-des-Îles</b><br>Imerys Graphite and Canada Carbon | <b>5</b> <b>La Loutre</b><br>Lomiko Metals Inc.           |
| <b>2</b> <b>Lac Guéret</b><br>Mason Graphite                      | <b>6</b> <b>Miller</b><br>Canada Carbon                   |
| <b>3</b> <b>Matawinie</b><br>Nouveau Monde Graphite               | <b>7</b> <b>Bell Graphite</b><br>Saint Jean Carbon        |
| <b>4</b> <b>Lac Knife</b><br>Focus Graphite Inc.                  | <b>8</b> <b>Mousseau West</b>                             |
|   | <b>9</b> <b>Lac Rainy Nord</b><br>Metals Australia Ltd    |
|   | <b>10</b> <b>Lac Guéret Sud</b><br>Berkwood Resources Ltd |

## Nickel, Copper, Cobalt and Platinum Group Elements

Two mines extract cobalt and platinum group elements as nickel by-products.

- |   |   |
|---|---|
| <b>11</b> <b>Raglan</b><br>Glencore Canada Corporation                    | <b>15</b> <b>Hawk Ridge</b><br>Nickel North Exploration Corp. |
| <b>12</b> <b>Nunavik Nickel</b><br>Canadian Royalties Inc.                | <b>16</b> <b>Lac Menarik</b><br>Harfang Exploration Inc.      |
| <b>13</b> <b>Dumont Nickel</b><br>Magneto Investments Limited Partnership | <b>17</b> <b>Lac Rocher</b><br>Victory Nickel Inc.            |
| <b>14</b> <b>Bravo</b><br>Jien Nunavik Mining Exploration Ltd.            | <b>18</b> <b>Nisk-1</b><br>Critical Elements Corporation      |
|   | <b>19</b> <b>Grasset</b><br>Balmoral Resources Ltd            |

## Niobium

Québec is the second largest producer of niobium in the world and the only producer in the Northern Hemisphere.

- |  |   |
|--|---|
| <b>20</b> <b>Niobec</b><br>Magris Resources Inc. | <b>21</b> <b>Crevier</b><br>Les Minéraux Crevier inc. |
|--|---|

## Titanium or Vanadium

Québec is the third largest producer of titanium in the form of ilmenite in the world.

- |  |   |
|--|---|
| <b>22</b> <b>Lac Tio</b><br>Rio Tinto Fer et Titane              | <b>25</b> <b>Magpie</b><br>The Magpie Mines Inc.              |
| <b>23</b> <b>BlackRock</b><br>BlackRock Metals Inc.              | <b>26</b> <b>Iron-T</b><br>Vanadium Corp.                     |
| <b>24</b> <b>Vanadium-Lac Doré</b><br>Vanadiumcorp Resource Inc. | <b>27</b> <b>Mont Sorcier Iron</b><br>Vanadium One Iron Corp. |
|  | <b>28</b> <b>Lac la Blache</b><br>Splendor Titanium Inc.      |

## Lithium

Québec has high lithium potential.

- |   |  |
|---|--|
| <b>29</b> <b>North American Lithium**</b><br>North American Lithium | <b>32</b> <b>Rose</b><br>Critical Elements Lithium Corporation |
| <b>30</b> <b>Whabouchi</b><br>Nemaska Lithium                       | <b>33</b> <b>Moblan</b><br>Lithium Guo Ao Ltée and SOQUEM      |
| <b>31</b> <b>Authier</b><br>Sayona Québec                           | <b>34</b> <b>James Bay</b><br>Galaxy Resources Limited         |

## Rare Earth Elements

Québec has several rare earth elements deposits and is recognized as having global potential.

- |   |  |
|---|--|
| <b>35</b> <b>Kwyjibo</b><br>SOQUEM                                | <b>38</b> <b>Kipawa (Zeus)</b><br>Corporation Métaux Précieux du Québec and Ressources Québec inc. |
| <b>36</b> <b>Eldor (Ashram)</b><br>Commerce Resources Corporation | <b>39</b> <b>Niobec - REE Zone</b><br>Niobec Inc.  |
| <b>37</b> <b>Strange Lake - Zone B</b><br>Torngat Metals Ltd.     | <b>40</b> <b>Carbonatite from Montviel</b><br>Geometa Resources Inc.                               |

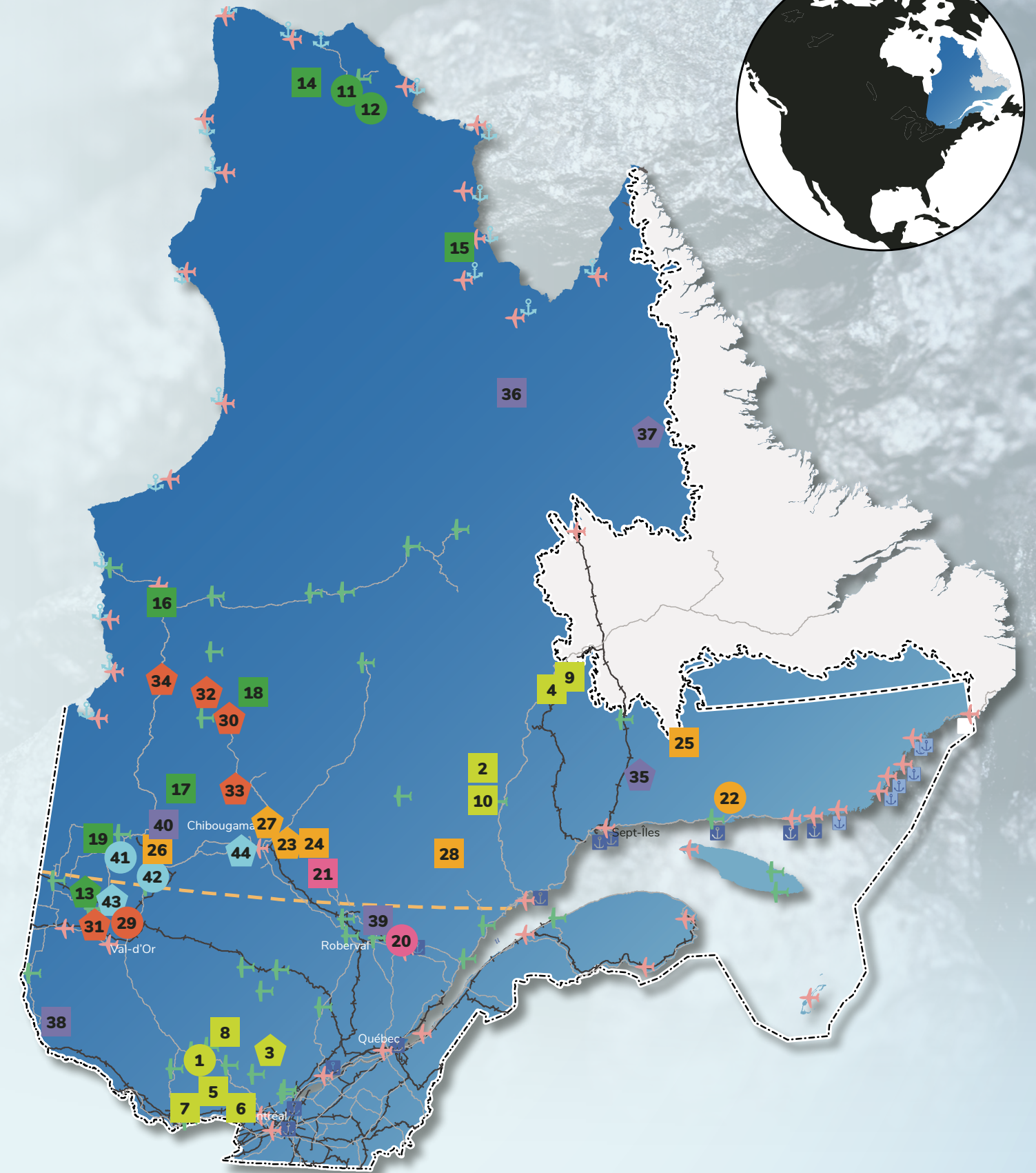
## Zinc and Copper\*

A copper smelter and refinery and a zinc refinery are in operation in Québec.

- |   |   |
|---|---|
| <b>41</b> <b>Bracemac-McLeod</b><br>Glencore Canada Corporation | <b>43</b> <b>Abcourt</b><br>Abcourt Mines Inc.            |
| <b>42</b> <b>Langlois (Grevet)**</b><br>Breakwater Resources    | <b>44</b> <b>Lac Scott</b><br>Les Ressources Yorbeau inc. |

\* The zinc and copper resources are not represented on the map.

\*\* Mines in maintenance



Project legend: □ Deposits (mineral resources) ▮ Development or construction and running-in projects ○ Mines

## APPENDIX 2 CSM PROCESSING IN QUÉBEC: PLANTS AND PROJECTS

### Primary processing plants

- 1** Fonderie Horne, Glencore, Canada  
Copper
- 2** Affinerie CCR, Glencore, Canada  
Copper
- 3** Zinc électrolytique du Canada, Société en commandite Revenu Noranda, Glencore Canada  
Zinc
- 4** Nanoxplore  
Graphene
- 5** 5N +  
Tellurium, bismuth, antimony, cadmium, indium, gallium, selenium, tin, zinc
- 6** Niobec, Magris Resources Inc.  
Ferroniobium
- 7** Rio Tinto Fer et Titane  
Titanium
- 8** Imerys Graphite  
Graphite

### Processing projects

- 9** Innord Inc., Geomega Resources  
Rare earths
- 10** Rio Tinto Fer et Titane  
Scandium
- 11** Alliance Magnesium  
Magnesium
- 12** KSM  
Magnesium
- 13** Eco2Magnesia  
Magnesium
- 14** Magnesium Technologies Recycles Inc.  
Magnesium
- 15** BlackRock, BlackRock Metals  
Vanadium
- 16** North American Lithium\*, CATL  
Lithium
- 17** Nemaska Lithium  
Lithium
- 18** Nouveau Monde Graphite  
Graphite



\* Mines under maintenance

Legend:  Primary processing plants  Processing projects

## APPENDIX 3 LIST OF CSMs AND SITUATION IN QUÉBEC

List of CSMs for Québec <sup>1</sup>	Comparison with other countries				Main producing countries <sup>6</sup>	Situation in Québec			
	USA <sup>2</sup>	EU <sup>3</sup>	JPN <sup>4</sup>	AUS <sup>5</sup>		Active mines	Development <sup>7</sup>	Deposits	Processing
Antimony	✓	✓	✓	✓	China (60.8%) Russia (20.4%) Tajikistan (10.3%)	-	-	-	High purity metal Alloys Semi-conductors Recycling
Bismuth	✓	✓		✓	China (73%) Laos (15.7%) South Korea (4.7%)	-	-	-	High purity metal Salts Alloys Recycling
Cadmium					China (32%) South Korea (22%) Japan (7.9%)	-	-	-	High purity metal Alloys Semi-conductors Recycling
Cesium	✓				N.A.	-	-	-	Catalysts
Cobalt	✓	✓	✓	✓	Congo (70.4%) Russia (4.1%) Australia (3.3%)	2 (b-p)	1 (b-p)	4 (b-p)	
Copper			✓		Chile (28.6%) Peru (12%) China (7.8%)	5 (b-p)	3 (b-p)	6 7 (b-p)	Anodes High purity metal Recycling
Rare earth elements	✓	✓	✓	✓	China (55.6%) Russia (11.4%) United States (11%)	-	2	3 1 (b-p)	Recycling
Platinum group elements	✓	✓	✓	✓	South Africa (53.1%) Russia (27.3%) Canada (6.7%)	2 (b-p)	1 (b-p)	4 (b-p)	By-product of copper refining
Pewter	✓		✓		China (28.3%) Indonesia (26.7%) Myanmar (17.2%)	-	-	1	High purity metal Alloys Semi-conductors Recycling
Gallium	✓	✓	✓	✓	China (96.1%) Russia (1.5%) Ukraine (1%)	-	-	-	High purity metal Salts Recycling
Graphite (natural)	✓	✓	✓	✓	China (61.7%) Mozambique (9.3%) Brazil (8.5%)	1	1	8	Micronization Spheroidization (demonstrators)
Indium	✓	✓	✓	✓	China (40.5%) South Korea (31.7%) Japan (9.4%)	-	-	-	High purity metal Salts Alloys Semi-conductors Recycling
Lithium	✓	✓	✓	✓	Australia (62%) Chile (17.9%) Argentina (6.7%)	-	6 <sup>8</sup>	1	Sulphate Hydroxide Recycling (pilot)
Magnesium	✓	✓	✓	✓	China (68.3%) Turkey (6.6%) Brazil (6.3%)	-	-	-	Recycling (demonstrator)

List of CSMs for Québec <sup>1</sup>	Comparison with other countries				Main producing countries <sup>6</sup>	Situation in Québec			
	USA <sup>2</sup>	EU <sup>3</sup>	JPN <sup>4</sup>	AUS <sup>5</sup>		Active mines	Development <sup>7</sup>	Deposits	Processing
Nickel					Indonesia (25.2%) Philippines (14.4%) Russia (11.3%)	2	1	5 2 (b-p)	
Niobium	✓	✓	✓	✓	Brazil (86.6%) Canada (11.3%) Other (2.1%)	1	-	1 2 (b-p)	Ferroniobium
Scandium	✓	✓		✓	N.A.	-	1 (b-p)	-	Demonstrator plant under development (pilot)
Tantalum	✓	✓	✓	✓	Congo (39.1%) Rwanda (22.2%) Brazil (13.2%)	-	1 (b-p)	2 (b-p)	Recycling
Tellurium	✓				China (62.4%) Japan (11.8%) Russia (8.6%)	-	-	-	High purity metal Salts Semi-conductors Dioxide Recycling
Titanium	✓	✓		✓	Ilmenite and rutile: China (28.1%) South Africa (11.6%) Australia (11.5%)	1	1	2 (b-p)	Slag
Vanadium	✓	✓	✓	✓	China (56.2%) Russia (25.3%) South Africa (10.8%)	-	2	1	
Zinc			✓		China (33.5%) Peru (11.8%) Australia (8.9%)	2 1 (b-p)	2 1 (b-p)	5 3 (b-p)	High purity metal Salts Alloys Semi-conductors Recycling

- The list of critical and strategic minerals for Québec was based on those from the European Union, the United States, Japan and Australia, and was endorsed by a committee of government experts in June 2020.
  - The list of critical and strategic minerals for the United States was established by the Department of the Interior and published by the United States Geological Survey: <https://www.federalregister.gov/documents/2018/05/18/2018-10667/final-list-of-critical-minerals-2018>.
  - The list of critical and strategic minerals for the European Union was established by the European Commission: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017DC0490>.
  - The list of critical and strategic minerals for Japan was published in a report by the Japanese Minister of the Economy, Trade and Industry in March 2018.
  - The list of critical and strategic minerals for Australia was taken from Australia's Critical Minerals Strategy: <https://www.industry.gov.au/sites/default/files/2019-03/australias-critical-minerals-strategy-2019.pdf>
  - Mineral Commodity Summaries 2020, United States Geological Survey: <https://pubs.usgs.gov/periodicals/mcs2020/mcs2020.pdf>
  - To be regarded as under development according to the Mineral Development Process, a project must have been the subject of at least one preliminary economic survey.
  - Includes mining projects at the development stage and one mine under maintenance.
- b-p. Element as a by-product

# THE BEST PLACE TO DO BUSINESS: QUÉBEC!

With a population of 8.5 million people, Québec welcomes you with a broad range of assets and possibilities.

## For additional information

You will find a host of information on the [Investing in the Mining Sector web page](#). Full details on CSM development can be found in the [Québec Plan for the Development of Critical and Strategic Minerals 2020-2025](#).

You can also email us at:  
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[info@invest-quebec.com](mailto:info@invest-quebec.com).