CRITICAL AND STRATEGIC MINERALS IN QUÉBEC

New Wealth and Business Opportunities
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.
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

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.

An attractive business environment

A competitive, reliable and modern mining regime favouring investment

Several tax incentives:

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

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

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

Measures supporting research and innovation

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

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

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
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

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

+ **Infrastructure**
  Consolidate the transportation, energy and telecommunications networks

+ **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.

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.

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

Graphite

Several graphite projects are underway in Québec.

1. Lac-des-Iles
Imerys Graphite and Canada Carbon
2. Lac Guéret
Mason Graphite
3. Matatino
Nouveau Monde Graphite
4. Lac Knife
Focus Graphite Inc.
5. La Loutre
Lomiko Metals Inc.
6. Miller
Canada Carbon
7. Bell Graphite
Saint Jean Carbon
8. Moussea West
9. Lac Rainy Nord
Metals Australia Ltd
10. Lac Guéret Sud
Berkwood Resources Ltd

Titanium or Vanadium

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

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

Nickel, Copper, Cobalt and Platinum Group Elements

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

29. Raglan
Glencore Canada Corporation
30. Nunavik Nickel
Canadian Royalties Inc.
31. Dumont Nickel
Magneto Investments Limited Partnership
32. Bravo
Jain Nunavik Mining Exploration Ltd.
33. Hawk Ridge
Nickel North Exploration Corp.
34. Lac Menarik
Harting Exploration Inc.
35. Lac Rocher
Victory Nickel Inc.
36. Nisk-1
Critical Elements Corporation
37. Grasset
Balmoral Resources Ltd

Lithium

Québec has high lithium potential.

38. North American Lithium
North American Lithium
39. Whabouchi
Namaska Lithium
40. Authier
Sayona Québec
41. Rose
Critical Elements Lithium Corporation
42. Moblan
Lithium Guo Ao Little and SOQUEM
43. James Bay
Galaxy Resources Limited

Rare Earth Elements

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

44. Kwyjibo
SOQUEM
45. Eldor (Ashram)
Commerce Resources Corporation
46. Strange Lake - Zone B
Tongail Metals Ltd.
47. Kipawa (Zeus)
Corporation Métaux Précieux du Québec and Ressources Québec Inc.
48. Niobec - REE Zone
Niobec Inc.
49. Carbonite from Montviel
Geomega Resources Inc.

Zinc and Copper*

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

50. Bracemac-McLeod
Glencore Canada Corporation
51. Langlois (Greve)**
Breakwater Resources
52. Abcourt
Abcourt Mines Inc.
53. Lac Scott
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

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

54. Niobec
Magris Resources Inc.
55. Crevier
Les Minéraux Crevier inc.
56. Kipawa (Zeus)
Corporation Métaux Précieux du Québec and Ressources Québec Inc.
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58. Carbonite from Montviel
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** Mines in maintenance
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. SN +
   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

    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

<table>
<thead>
<tr>
<th>List of CSMs for Québec&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Comparison with other countries&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Main producing countries&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Situation in Québec</th>
<th>Active mines</th>
<th>Development&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Deposits</th>
<th>Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>✔ ✔ ✔</td>
<td>China (60.8%) Russia (20.4%) Kazakhstan (10.3%)</td>
<td>- - -</td>
<td>High purity metal</td>
<td>- - -</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bismuth</td>
<td>✔ ✔ ✔</td>
<td>China (73%) Laos (15.7%) South Korea (4.7%)</td>
<td>- - -</td>
<td>High purity metal</td>
<td>- - -</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cadmium</td>
<td>✔ ✔ ✔</td>
<td>China (32%) South Korea (22%) Japan (7.9%)</td>
<td>- - -</td>
<td>High purity metal</td>
<td>- - -</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cesium</td>
<td>✔</td>
<td>N.A.</td>
<td>- - -</td>
<td>Catalysts</td>
<td>- -</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cobalt</td>
<td>✔ ✔ ✔</td>
<td>Congo (70.4%) Russia (4.1%) Australia (3.3%)</td>
<td>2 (b-p)</td>
<td>-</td>
<td>1 (b-p)</td>
<td>4 (b-p)</td>
<td>By-product of copper refining</td>
</tr>
<tr>
<td>Copper</td>
<td>✔ ✔</td>
<td>Chile (28.6%) Peru (12%) China (7.8%)</td>
<td>5 (b-p)</td>
<td>3 (b-p)</td>
<td>6 (b-p)</td>
<td>7 (b-p)</td>
<td>Anodes High purity metal Recycling</td>
</tr>
<tr>
<td>Rare earth elements</td>
<td>✔ ✔ ✔</td>
<td>China (55.6%) Russia (11.4%) United States (11%)</td>
<td>-</td>
<td>2</td>
<td>3</td>
<td>1 (b-p)</td>
<td>Recycling</td>
</tr>
<tr>
<td>Platinum group elements</td>
<td>✔ ✔ ✔</td>
<td>South Africa (53.1%) Russia (27.3%) Canada (6.7%)</td>
<td>2 (b-p)</td>
<td>1 (b-p)</td>
<td>4 (b-p)</td>
<td>-</td>
<td>By-product of copper refining</td>
</tr>
<tr>
<td>Pewter</td>
<td>✔ ✔</td>
<td>China (20.3%) Indonesia (24.7%) Myanmar (17.2%)</td>
<td>- - -</td>
<td>High purity metal</td>
<td>- - -</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gallium</td>
<td>✔ ✔ ✔</td>
<td>China (96.1%) Russia (1.5%) Ukrainian (1%)</td>
<td>- - -</td>
<td>High purity metal</td>
<td>- - -</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Graphite (natural)</td>
<td>✔ ✔ ✔</td>
<td>China (61.7%) Malaysia (9.3%) Brazil (8.5%)</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>-</td>
<td>Microinization Spheroidization (demonstrators)</td>
</tr>
<tr>
<td>Indium</td>
<td>✔ ✔</td>
<td>China (40.5%) South Korea (31.7%) Japan (9.4%)</td>
<td>- - -</td>
<td>High purity metal</td>
<td>- - -</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lithium</td>
<td>✔ ✔ ✔</td>
<td>Australia (62%) Chile (17.9%) Argentina (6.7%)</td>
<td>6&lt;sup&gt;4&lt;/sup&gt;</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>Sulphate Hydroxide Recycling (demonstrator)</td>
</tr>
<tr>
<td>Magnesium</td>
<td>✔ ✔ ✔</td>
<td>China (63.9%) Turkey (8.6%) Brazil (6.3%)</td>
<td>- - -</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Recycling (demonstrator)</td>
</tr>
</tbody>
</table>

### List of CSMs for Québec<sup>1</sup> | Comparison with other countries<sup>2</sup> | Main producing countries<sup>3</sup> | Situation in Québec | Active mines | Development<sup>1</sup> | Deposits | Processing |
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel</td>
<td></td>
<td>Indonesia (25.3%) Philippines (14.4%) Russia (11.3%)</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>5</td>
<td>2 (b-p)</td>
</tr>
<tr>
<td>Niobium</td>
<td>✔ ✔ ✔</td>
<td>Brazil (86.9%) Canada (11.3%) Other (2.1%)</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>2 (b-p)</td>
<td>-</td>
</tr>
<tr>
<td>Scandium</td>
<td>✔ ✔ ✔</td>
<td>N.A.</td>
<td>-</td>
<td>1 (b-p)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tantalum</td>
<td>✔ ✔ ✔</td>
<td>Congo (39.1%) Rwanda (22.9%) Brazil (13.2%)</td>
<td>-</td>
<td>1 (b-p)</td>
<td>2 (b-p)</td>
<td>-</td>
<td>Recycling</td>
</tr>
<tr>
<td>Tellurium</td>
<td>✔</td>
<td>China (62.4%) Japan (11.9%) Russia (6.5%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>High purity metal</td>
</tr>
<tr>
<td>Titanium</td>
<td>✔ ✔</td>
<td>China (56.2%) Russia (20.3%) South Africa (10.8%)</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>Semi-conductors</td>
</tr>
<tr>
<td>Zinc</td>
<td>✔</td>
<td>China (33.5%) Peru (11.8%) Australia (8.9%)</td>
<td>2</td>
<td>1 (b-p)</td>
<td>1</td>
<td>2 (b-p)</td>
<td>5</td>
</tr>
</tbody>
</table>

1. 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.
4. 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.
7. 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.
8. Includes mining projects at the development stage and one mine under maintenance.

<sup>1</sup>b-p. Element as a by-product
<sup>2</sup>Economy, Trade and Industry in March 2018.
<sup>3</sup>Economy, Trade and Industry in March 2018.
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:
services.mines@mern.gouv.qc.ca
info@invest-quebec.com.