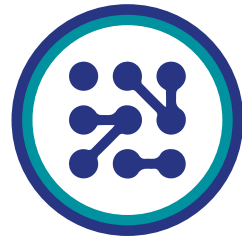


**NORTH AMERICAN COMPETITIVENESS WORKING GROUP**

# CANADA'S PROVINCIAL CLEAN TECH NEARSHORING POTENTIAL: A CASE STUDY OF ONTARIO AND QUEBEC

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## ABSTRACT

While much attention has focused on nearshoring investments in Mexico and the United States, driven in part by changing geo-politics and U.S. industrial policy, less well known are recent advances among Canadian provinces, in particular Ontario and Quebec, to capture their share of in-bound foreign investment with a focus on clean tech and advanced manufacturing. This paper examines the steps taken nationally by Canada – with special emphasis on the provinces of Ontario and Quebec – to offer corporate subsidies and revise regulatory process approval for critical mineral projects in order to strengthen Canada's regional economic competitiveness vis-à-vis other sub-national regions across North America. This paper also examines the U.S.-Canadian bilateral relationship and growing U.S. reliance on its northern neighbor for more reliable alternative supply chains for critical minerals given changing geopolitics and growing tensions with China.



## I. INTRODUCTION

**COVID-19 pandemic supply chain disruptions that resulted in factory closures and commodity shortages, coupled with a fast-evolving U.S. industrial policy in response to changing geo-politics, have prompted a growing number of multinational companies to consider North American regional re-shoring/nearshoring options for their manufacturing operations.** Recent Chinese government anti-spying laws have accelerated this move for some multinationals given the chilling effect that such policies are generating as companies are forced to de-couple data of Chinese origin from the rest of their global operations<sup>1</sup> which is leading to a further decline in foreign direct investment there.<sup>2</sup>

Mexico and the United States have both benefited disproportionately from recent reshoring and nearshoring investments for different reasons: Mexico due to its labor cost advantage and the United States due, in part, to the over \$369 billion in Federal clean tech and green-energy incentives tied to the Inflation Reduction Act (IRA) and U.S. Chips & Science Act. Meanwhile, Canada is doing what it can to effectively position itself to compete for its share of North America's future nearshoring investment, though its efforts and strategic interests are often overlooked by its southern neighbor.

Given its inability to compete dollar-for-dollar with the United States in offering the same level of fiscal incentives to manufacturing companies considering re-shoring/nearshoring opportunities, Canada's focus has been in formulating a national economic development strategy in close partnership with its provincial governments, emphasizing the country's comparative advantages which include its own geographical proximity to the U.S. market, a well-developed infrastructure with an integrated cross-border supply chain, the USMCA trade agreement, an abundance of renewable energy, and a stable and reliable government. Canada also has a highly educated STEM workforce as well as a more open and pragmatic immigration policy that is now providing employment opportunities through the new [Open Work Permit \(OWP\) Program](#) for skilled foreign-born tech professionals who are unable to secure H1B visas in the United States.<sup>3</sup> U.S. multinationals are taking notice of Canada's more enlightened and business-friendly immigration policies, so now tech hubs in cities like Vancouver, Toronto and Montreal are becoming magnets for best-in-class international talent.

One of Canada's greatest strategic advantages is the fact that it is the only Western nation that has an abundance of strategic minerals – **including cobalt, graphite, lithium, and nickel** – which are essential for electric vehicles (EVs) and storage batteries that will be critical for the world's rapidly growing green and digital economies. Canada is also the world's second largest producer of niobium (after Brazil), an important metal for the aerospace industry. Additionally, Canada is the fourth-largest producer of indium, a key input for semiconductors and materials needed for advanced vehicle manufacturing.<sup>4</sup>

<sup>1</sup> Ryan McMorrow, Multinationals in China accelerate push to decouple data, Financial Times, July 15, 2023

<sup>2</sup> Ryan McMorrow, Work dries up for US consultancies in China after national security raids, Financial Times, July 22 2023

<sup>3</sup> Andy J. Semotiuk, U.S. H-1B Visa Holders Targeted By Canada's New Immigration Program, Forbes, June 28, 2023

<sup>4</sup> <https://www.canada.ca/content/dam/nrcan-rncan/site/critical-minerals/Critical-minerals-strategyDec09.pdf>



**For both Canada and the United States, Canada's rich deposits of critical minerals and future plans to expand investments in processing, as in the case of graphite, represent an opportunity for North America to break free from the dependence of minerals on China, where 80% of critical minerals are currently refined.** As Canadian Prime Minister Trudeau declared in Montreal at the COP's 2022 biodiversity conference, "there are places like China and Russia, suppliers of these [strategic] metals, that are less and less reliable. There is an opportunity for Canada to supply the resources we all need to transition to a carbon neutral world."<sup>5</sup>

In response to the growing clean energy supply chain needs of North American manufacturers in 2020, the United States and Canada issued the Canada-US Joint Action Plan on Critical Minerals (JAPCM). Under the JAPCM, key U.S. agencies (**including the Departments of State, Commerce, Defense, Energy and the U.S. Geological Service**) committed to working with their Canadian counterparts and the private sector to increase information and data-sharing, spur research and development, and boost investment with the goal of expanding the available supply of critical minerals bilaterally.<sup>6</sup>

In support of JAPCM, the United States recently committed \$250 million in funding via the Defense Protection Act (DPA) for both U.S. and Canadian companies to mine and process critical minerals for electric vehicles and stationary storage batteries, with an additional \$50 million earmarked for U.S. and Canadian companies to strengthen advantage packaging of semiconductors and printed circuit boards in North America.<sup>7</sup>

For its part, the government of Canada has also committed to leveraging its own resources and expertise of federal trade and business development organizations, including the Business Development Bank of Canada, Export Development Canada, and the Canadian Commercial Corporation to help catalyze critical mineral exploration and production projects. This support to new mining ventures includes a 30% Critical Minerals Exploration Tax Credit that has been introduced to support exploration expenditures incurred in Canada for key critical minerals including nickel, lithium, cobalt, graphite, copper, rare earth elements, vanadium, and uranium, among others. Additionally, Canada's Strategic Innovation Fund (SIF) has committed CDN\$1.5 billion to support critical minerals projects tied to advanced manufacturing, processing, and recycling applications including EV batteries.<sup>8</sup>

While the Canadian government has laid out a strategy identifying 31 critical minerals to develop and has also committed CDN\$31.11 billion<sup>9</sup> for that sector, a key criticism of the Canadian Mining Association is that more needs to be done to promote mining-friendly policies that will help get projects out of the ground.<sup>10</sup> After all, in Canada it can take anywhere from 5 to 25 years for a mining project to progress from discovery to production due to rigorous federal and provincial/territorial regulatory assessments required to meet the country's strict environmental and social standards.<sup>11</sup> According to the Ontario Mining Association, ESG factors are the number one risk factor for their industry.<sup>12</sup>

<sup>5</sup>Alexis Gragon, Inside Canada's Mining Boom – And What it Could Mean for China, World Crunch, July 22, 2023 <https://worldcrunch.com/business-finance/canada-mining-graphite-china>

<sup>6</sup><https://www.whitehouse.gov/wp-content/uploads/2022/06/CANADA-U.S.-SUPPLY-CHAINS-PROGRESS-REPORT.pdf>

<sup>7</sup><https://www.whitehouse.gov/briefing-room/statements-releases/2023/03/24/fact-sheet-strengthening-the-united-states-canada-partnership/>

<sup>8</sup>The Canadian Critical Minerals Strategy, page 22

<sup>9</sup>CDN\$31.11 billion is equivalent to USD\$23.48 billion at an exchange rate of 1.33 Canadian dollars to 1 US dollar.

<sup>10</sup><https://www.politico.com/news/2023/03/24/united-states-and-canada-break-china-tech-dominance-00088598>

<sup>11</sup>The Canadian Critical Minerals Strategy: From Exploration to Recycling: Powering the Green and Digital Economy for Canada and the World, Natural Resources Canada 2022, page 21 <https://www.canada.ca/content/dam/nrcan-rncan/site/critical-minerals/Critical-minerals-strategyDec09.pdf>

<sup>12</sup><https://oma.on.ca/en/ontario-mining/2022-OMA-Economic-Research-Report.pdf>

**While the strategic importance of Canada's critical minerals is becoming clear to the U.S. in the context of challenging geo-politics, Canada is sensitive to perceptions it is a place for extraction and export of raw minerals so the country's natural capital can be processed and integrated into a clean tech value chain across the border in the United States.** This is especially true given the environmental impacts of all extractive mining projects. Since Canada has activity positioned itself as the only country in the world that combines mineral wealth with strong ESG standards (high wages, strong environmental regulation, indigenous community consultation, and stable democratic governance), ESG related factors cannot be overlooked.

Recognizing the ESG-related approval risks posed by new Canadian critical mineral mining ventures, Natural Resources Canada (NRC) is helping to accelerate project development. NRC has also committed CDN\$40 million to support northern regulatory processes in reviewing and permitting critical minerals projects, along with another CDN\$21.5 million to support a Critical Minerals Centre of Excellence (CMCE) to develop federal policies and programs on critical minerals that will assist project developers to more effectively navigate regulatory processes and federal support measures.<sup>13</sup> Beyond these initial efforts to streamline the permitting process, according to Louise Blais, a former Canadian diplomat and senior advisor to the Business Council of Canada, "Canada needs its own domestic version of the IRA for the [mining] sector with a plan for eliminating regulatory red tape that brings the necessary partners to the table."<sup>14</sup>

While Canada's critical minerals are widely distributed across the country (See Figure 1) the provinces attracting the lion's share of new clean tech-focused inward nearshoring investment -due to their own readily available critical minerals and established cross-border supply chains with the United States - are Ontario and Quebec. This issue paper will further examine clean tech focused economic development efforts by these two Canadian provinces. Itionally, Volkswagen secured an added federal grant of CDN\$700 million plus CDN\$500 million from the province of Ontario.<sup>15</sup> Here, the key driver behind the Canadian incentives was an attempt to out-compete the U.S. state of Oklahoma which offered Volkswagen nearly \$698 million in state tax rebates to draw the German automaker to an industrial park located in the rural town of Pryor with a population of less than 8,700 people.<sup>16</sup>

**For the Stellantis/LG Energy Solutions deal in Windsor, a total of CDN\$15 billion in incentives was offered, including CDN\$5 billion from the province of Ontario.<sup>17</sup>**



<sup>13</sup>Critical Minerals Strategy, p 22.

<sup>14</sup>Politico

<sup>15</sup>Adam Radwanski, Volkswagen could be a legacy-building moment or a boomtown pipe dream, The Globe and Mail, April 21, 2023

<sup>16</sup>Barbara Hoberock, Volkswagen picks Canada after Oklahoma offered \$700M incentive package for plant in Pryor, Tulsa World, May 11, 2023. <https://tulsaworld.com/news/local/business/volkswagen-picks-canada-after-oklahoma-offered-700m-incentive-package-for-plant-in-pryor/article-b57b1410-c1c7-11ed-aa6e-9f6f281f3ff5.html>

<sup>17</sup>Adam Radwanski, With Stellantis, Volkswagen deals, Ontario eyes bigger role in battery plant subsidies, The Globe & Mail, July 7, 2023.



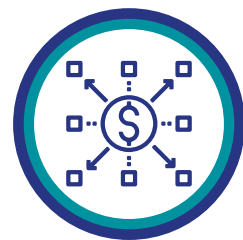


**While Canada was successful in luring Volkswagen and Stellantis/LG Energy Solutions to Ontario through IRA-like subsidies, these deals have been criticized as having questionable public benefit.** Kent Fellows, an assistant professor of economics at the University of Calgary's School of Public Policy, has argued the referenced deals were both fiscally irresponsible and inflationary. He also questioned the government's economic assumptions related to direct job creation and economic impact. According to Fellows, "It's hard to see what the Canadian and Ontario governments get in return."<sup>18</sup> He further observed that, "Canada cannot win a subsidy war against the U.S. They have a substantially larger economy with a larger tax base." Countering these concerns, Canadian Prime Minister Justin Trudeau noted, "the Canadian economy can't go toe-to-toe with (the IRA) on a global overall scale, but we can be very — **and we have been very** — strategic about where we want to step up and compete directly."<sup>19</sup> While Prime Minister Trudeau's position is understandable, one Ottawa-based budgetary official questioned the logic and economic sustainability of these corporate subsidies, calling "the IRA a black hole, sucking investment into the United States."<sup>20</sup>

Other Canadian critics have raised concerns about the disproportionate share of EV incentive subsidies going to Ontario and Quebec, though, here it must be recognized the cross-border auto supply chain between the U.S. and these two provinces is already well established. To allay domestic political concerns with other provinces over issues of equity and fairness, during the past year the Canadian federal government has established a new form of cost-sharing partnership focused on new EV and battery manufacturing plant investments.

The federal government's course correction on how government subsidies would be structured has resulted in some unexpected changes to previously negotiated projects. In the case of the Windsor deal, that project was temporarily stalled as the Ontario provincial government had previously argued that, "matching U.S. subsidies was solely a federal responsibility."<sup>21</sup> With the Ontario government now agreeing to cover the cost of one-third of the production incentives of the Stellantis/LG Energy Solutions EV auto plant, the project is now going forward.<sup>22</sup>

The government of Ontario also agreed to a similar one-third cost sharing arrangement with Volkswagen, requiring the deal with that company be re-written after having been previously announced in April 2023. Going forward, all future incentive packages offered to prospective companies across Canada will require provincial cost sharing agreements similar to the ones reached in Ontario with both Volkswagen and Stellantis/LG.



<sup>18</sup>Kent Fellows, Opinion: Canada's billions to Volkswagen and Stellantis are irresponsible and inflationary, *Globe & Mail*, May 24, 2023

<sup>19</sup>Jacquelyn Lebel, Will Ottawa's \$13B Volkswagen deal be worth it? Trudeau, Ford defend plans, *Global News-Canada*, April 21, 2023. <https://globalnews.ca/news/9641259/volkswagen-ev-plant-canada-ontario/>

<sup>20</sup>Brain Platt, Endra Curran and Gabriela Coppola, [Subsidy Wars Heat Up with US Allies Forced to Pay Up or Lose Out](https://www.bloomberg.com/news/articles/2023-07-25/subsidy-wars-heat-up-with-us-allies-forced-to-pay-up-or-lose-out), *Bloomberg.com*, July 25, 2023

<sup>21</sup>Subsidy War Heats Up

<sup>22</sup>Dvid Cochrane, Ontario covering one-third of incentives for both Stellantis and Volkswagen, *Canadian Broadcasting Corporation (CBC)*, July 6, 2023. <https://www.cbc.ca/news/politics/ontario-funding-stellantis-volkswagen-1.6899378>

**While Ontario has agreed to assume greater responsibility for corporate subsidies offered to companies like Volkswagen and Stellantis, not all provinces are satisfied.** Officials from oil sands-rich Alberta argue that federal subsidies would be better spent supporting carbon capture and storage (CCS) projects such as the Pathways Alliance Project<sup>23</sup> being developed in the province.<sup>24</sup> According to Alberta provincial officials, the Pathways Project would reduce annual emissions in their province by 10 to 12 million tons by 2023. The CCS project alone is expected to require CND\$16.5 billion in investment and would create 25,000 to 30,000 direct and indirect jobs. Backers of the Pathways Project argue the project would generate 10 times the jobs estimated for the Stellantis EV battery plant.<sup>25</sup>



## II. ONTARIO

**After Detroit, the province of Ontario represents one of the two largest automotive manufacturing regions in North America, serving as the Canadian headquarters for six leading auto companies: Stellantis, Ford, General Motors, Honda, Fiat/Chrysler, and Toyota.** For Ontario, the auto industry is the province's most important industrial sector, generating 100,000 direct jobs plus thousands more indirect jobs. All told, in 2017 Ontario's automobile sector accounted for **2.4%** of the province's Gross Regional Product (GRP) and **18.5%** of its manufacturing GRP.<sup>26</sup> Ontario also supports an integrated supply chain of over 700+ parts firms and 500+ tool, die and mold makers.

Given the strategic importance of the automobile's sector to Ontario's economy, it has proven critical for the province to play a leadership role in partnering with the federal government to ensure the province remain competitive vis-à-vis other subnational regions across North America, particularly U.S. states, vying for next generation EV and giga-factory manufacturing plants. Accordingly, corporate subsidies have become a critical ingredient in Ontario's economic development tool kit that has contributed to the province, attracting over CND\$23.27 billion in new electric vehicle and EV battery investments in recent years as highlighted in Appendix A.

Beyond manufacturing facilities, Ontario has also been pro-actively working to attract investments in cutting-edge R&D facilities for the auto sector. Thanks to these efforts, in recent years Ontario has been successful in getting the Ford Motor Company to establish a new [Research & Engineering Center](#) in Katana, just outside of Ottawa, ON. GM also established an autonomous vehicle [tech center](#) in Markham, just outside of Toronto. China's mobility company, [DiDi](#) has also established a second North American R&D lab in the Toronto-Waterloo corridor with an emphasis on the auto sector and research interests in the areas of AI and intelligent driving.

With the future needs of the province's auto sector in mind and the growing demand for EVs and battery storage, Ontario is also strategically positioning itself to integrate its critical mineral assets (mines, smelters and refineries) of cobalt, nickel, lithium, graphite, chromium, and platinum group elements<sup>27</sup> as part of its "made-in-Ontario," clean-tech value chain.<sup>28</sup>

<sup>23</sup>Tim McKay, et al, Pathways Alliance plan can help lead Canada to a clean energy industry and a net-zero future, *The Globe and Mail*, March 28, 2022

<sup>24</sup>Deborah Yedlin, Billions given to Volkswagen and Stellantis-what about oil and gas's carbon initiatives?, *Globe and Mail*, July 25, 2023

<sup>25</sup>Ibid

<sup>26</sup>Driving for Prosperity: The Future of Ontario's Automobile Sector," *Government of Ontario*, 2018

<sup>27</sup><https://www.canada.ca/en/campaign/critical-minerals-in-canada/critical-minerals-an-opportunity-for-canada.html>

<sup>28</sup><https://www.investontario.ca/cleantech#intro>



## CRITICAL MINERALS EARLY EXPLORATION PROJECTS



IN 2020, ONTARIO PRODUCED APPROXIMATELY  
**CND\$3.5 BILLION**  
IN CRITICAL MINERALS



AND OVER  
**CDN\$10 BILLION**  
IN TOTAL MINERAL PRODUCTION



SUPPORTING OVER  
**75,000**  
DIRECT AND INDIRECT JOBS ACROSS THE PROVINCE.<sup>29</sup>



Yet as Figure 2 highlights, Ontario has many other critical mineral projects in early exploration stages of development that have the potential to dramatically expand the province's mining sector's economic prospects.

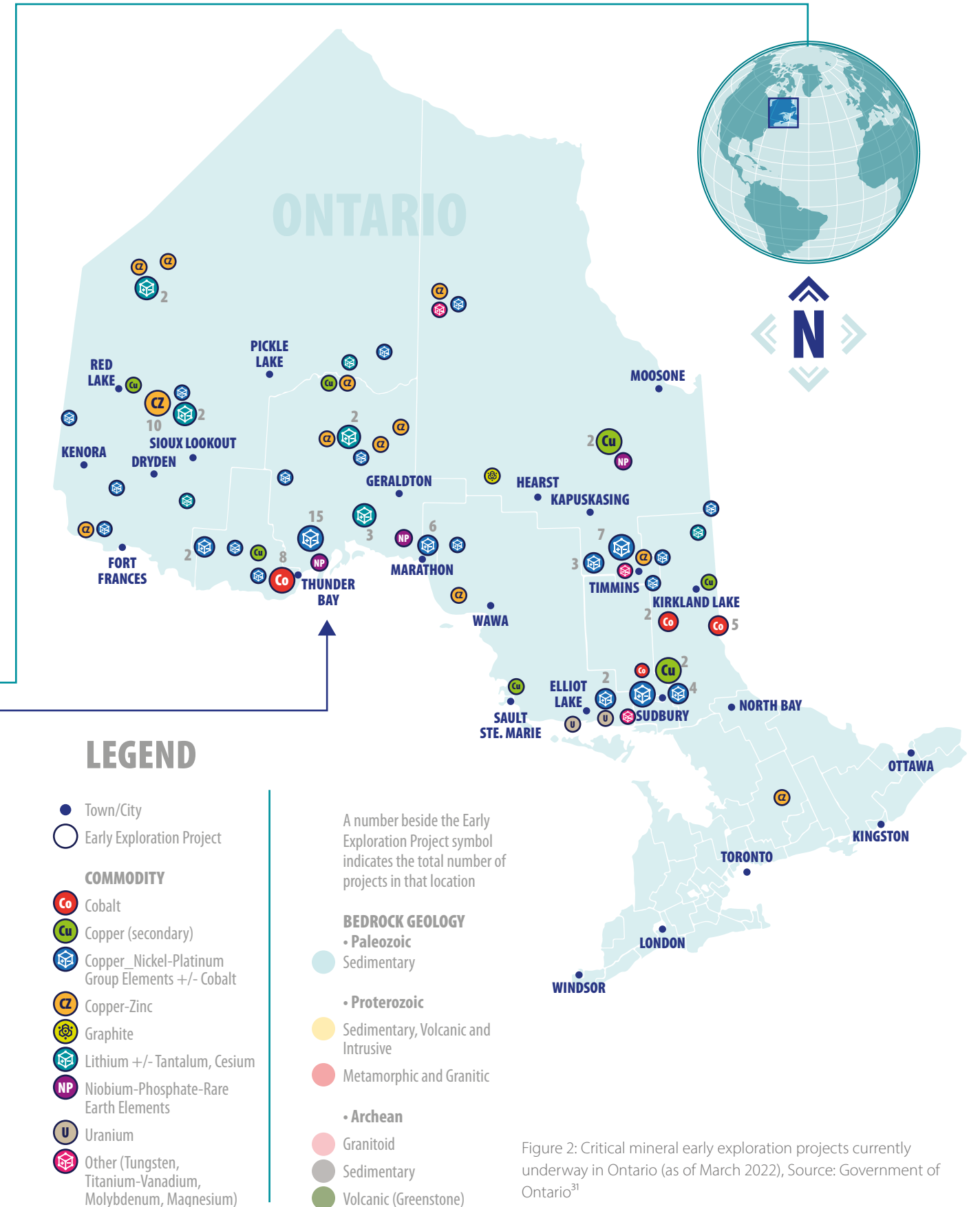


Ontario's richest critical mineral deposits are in a northern area of the province known as the Ring of Fire, a **5,000 square km region about 500km northeast of Thunder Bay.**<sup>30</sup>

<sup>29</sup><https://www.ontario.ca/page/ontarios-critical-minerals-strategy-2022-2027-unlocking-potential-drive-economic-recovery-prosperity#:text=Ontario's%20critical%20minerals%20list%20%20%20%20Mineral,Pharmaceuticals%20and%20metallurgy%20%2029%20more%20rows%20>

<sup>30</sup><https://www.ontario.ca/page/ontarios-ring-fire>

<sup>31</sup><https://www.ontario.ca/page/ontarios-critical-minerals-strategy-2022-2027-unlocking-potential-drive-economic-recovery-prosperity#:text=Ontario's%20critical%20minerals%20list%20%20%20%20Mineral,Pharmaceuticals%20and%20metallurgy%20%2029%20more%20rows%20>





Towards that end, the government of Ontario has invested CDN\$24 million in the Ontario Junior Exploration Program with CDN\$12 million specifically earmarked for critical minerals. An additional CDN\$5 million was also earmarked in 2022 over two years in a new critical minerals innovation fund to support research for extraction and processing in Ontario's north.<sup>32</sup>

Like other provinces that are seeking to take advantage of Canada's window of opportunity to capture critical minerals market share from China, the government of Ontario is now working to amend its Mining Act and corresponding regulations to streamline the permitting process for new mines with the goal of speeding up approvals, reducing administrative burdens, and increasing clarity on regulatory requirements and application processes for project proponents/applicants.<sup>33</sup> Additional consideration is also being given to develop regulatory pathways for lower impact mining that requires environmental approvals, including providing project management support and inter-ministry coordination for regulatory approvals for critical mineral projects across Ontario.



### III. QUEBEC

Like Ontario, Quebec has stepped up efforts to take advantage of nearshoring opportunities related to electric vehicle and battery storage manufacturing plants. While Quebec is not as well situated as Ontario along the cross-border Detroit-Southern Ontario auto corridor, it has other comparative advantages including a ready source of green, affordable energy. In fact, Quebec is one of the largest producers of hydro power in the world that offers some of the lowest and most stable electric rates in North America.<sup>34</sup> Still, Hydro-Quebec has warned that its current grid is reaching capacity as it works to fulfill cross-border contractual commitments with several U.S. states, a problem that could be resolved if and when major wind power projects come on line over the next decade.<sup>35</sup> The timing of these mission-critical renewable energy projects will, of course, depend on securing the required environmental regulatory approvals.

Besides Quebec's ready access to affordable and reliable green energy, what has drawn new clean-tech investments to the province is its abundance of critical minerals, including its mines and localized smelting/processing capacity. Quebec's critical minerals asset portfolio includes the world's third largest deposits of lithium, graphite and aluminum plus major deposits of magnesium, rare earth elements, titanium, nickel, cobalt, platinum group metals, vanadium, and niobium. See Appendix B.

Due to its proximity to critical minerals, over the past three years Quebec has been able to attract over CDN\$1.2 billion in EV-related auto parts and new battery manufacturing investments as highlighted in Appendix C. This includes an investment of CDN\$496 million by Lion Electric Company in Marabel, QC for a battery manufacturing plant and innovation center for all electric medium and heavy-duty vehicles, including school buses. The town also successfully lured a CDN\$600 million investment by General Motors and their joint venture partner, POSCO Chemical Co. (S. Korea) to produce cathode active materials for EVs at their new facility in Bécancour, located about 100 kilometers from Quebec City.

<sup>34</sup>The Quebec Advantage brochure, Government of Quebec, 2022

<sup>35</sup>Quebec, like Mass. facing electric challenges of its own, Commonwealth Magazine, May 23, 2023.

While Bécancour is a small countryside town of only 15,000 people (see Figure 3), a key draw is Canada's biggest ready-to-build industrial park spanning over 70 square kilometers. Additionally, Quebec is offering provincial tax incentives for companies to move into town. As such, GM, Germany's BASF SE, Brazilian mining giant Vale SA and Electra Battery Materials are being drawn to Bécancour. With these investments and others in the pipeline, provincial officials estimate the total investment in Bécancour will exceed CDN\$4 billion in a few years with a possible doubling of that figure if companies planning to invest there expand in the future. All told, the government of Quebec is prepared to invest up to CDN\$3 billion in tax incentives to support EV battery projects in Bécancour alone.<sup>36</sup>

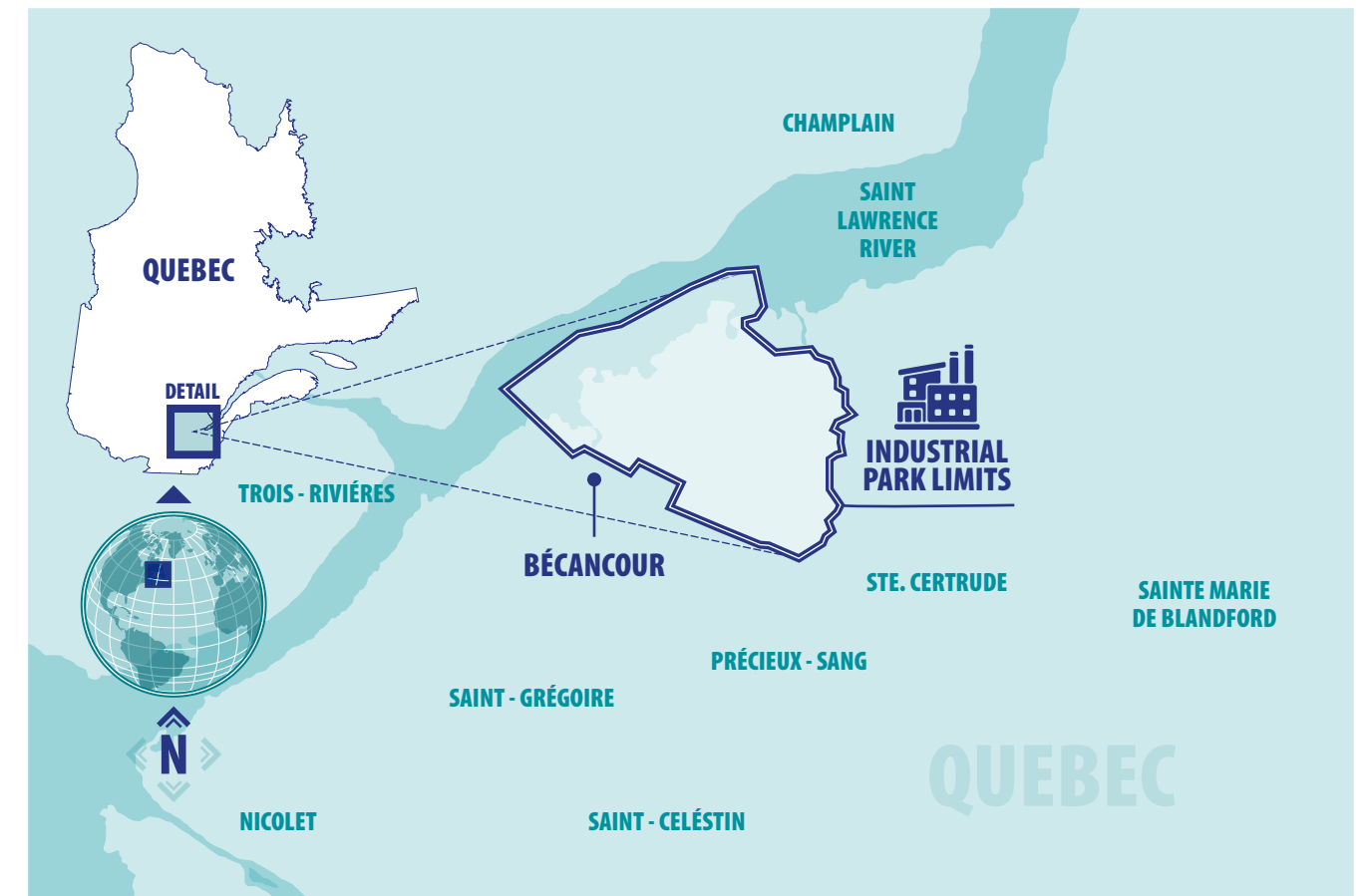


Figure 3: Bécancour, Quebec's upcoming clean-energy boom town.

Source: The Global and Mail, May 2023.

In the case of Electra Battery Materials, the company has invested CDN\$100 million in North America's first cobalt refinery for battery metals as well as the development of Canada's second cobalt processing facility. Electra Battery Materials' new investment is noteworthy as it will enable Canada to offer a more reliable and ESG-friendly alternative supply of cobalt to North American EV battery makers. This will allow these battery manufacturing facilities to substitute Chinese-sourced cobalt from the Democratic Republic of the Congo that has, over the years, come with its own set of ethical challenges due to their mines' well-documented environmental impacts and troubling labor conditions, including the frequent use of child labor with children as young as six years of age working in the mines.<sup>37</sup>

<sup>36</sup>Nicolas Van Praet, How the EV battery boom could change Bécancour, a quiet corner of Quebec, forever, The Global and Mail, May 5, 2023

<sup>37</sup>Siddharth Kara, How our green transition and hunger for battery metals devastate Africa and the Congo, The Globe and Mail, July 22, 2023





As with the Electra Battery Materials facility and its focus on cobalt, the Quebec provincial government is working closely with the federal government to create a lithium-ion battery supply chain within the province. Here, the proposed Matawinie open-pit graphite mine, owned by Nouveau Monde Graphite (NMG), would be strategic. If or when it enters into production, Matawinie would become the largest graphite mine in North America with an expected production of 100,000 tons of graphite a year over the course of 26 years. Yet, because of its expected environmental impacts, the project's approval is not assured. According to a local group opposing the project, Matawinie would produce 108 million tons of waste over its lifespan including waste rock containing high levels of sulphides, which if exposed to air and water would create sulfuric acid that would harm nearby ecosystems.<sup>38</sup> Hence, the project is experiencing pushback from environmental groups.

Beyond the auto sector, Quebec's rich mineral resource potential has been a draw for the aerospace sector, with companies such as Bombardier, Airbus, CAE and Bell drawn to the province as they, like the auto sector, pursue their own form of green transformation.

Like Ontario, Quebec has also sought to compete head-to-head with other subnational regions by offering its own share of tax related incentives, including a **15%** reduction in taxes for large investment projects over a 15-year timeframe and a **100%** depreciation on equipment in the first year of operations. Quebec also offers tax credits of up to **45%** for the acquisition of manufacturing and processing equipment procured within the province. Additionally, the province offers companies investing in R&D tax credits with **14%** fully refundable plus another **15%** fully refundable via the Federal government.<sup>39</sup>



<sup>38</sup>Neal Rockwell, How a Quebec graphite mine is dividing a community's support for the EV revolution, The Globe & Mail, October 9, 2022

<sup>39</sup>The Quebec Advantage brochure



## IV. CONCLUSION

While Mexico and the United States remain the center of attention for a growing number of multinational companies pursuing re-shoring/nearshoring investment opportunities, Ontario and Quebec have --thanks to their own set of US IRA-like incentives, proximity to critical minerals, and a ready supply of reliable clean energy-- both been able to successfully secure their share of high value-added, clean-tech investments with a focus on electric vehicles and battery manufacturing facilities. Here, a fair question to ask is whether these initial investments can be duplicated given Canada's more limited budgetary resources?

Though Canada is committing fewer public resources than the U.S. to lure clean tech companies to its country, it is important to recognize Canada's economy is much smaller than that of its southern neighbor. Still, the Canadian government committed CDN\$139 billion in 2021 to clean energy development which represents 5% of the country's nominal GDP according to a report by TD Economics. This is in contrast to the USD\$393 billion in IRA-related clean energy spending that accounts for 1.5% of U.S. nominal GDP.<sup>40</sup> Also, Canada has an established carbon pricing system whereas, apart from California and a few other U.S. states, the United States does not. So, U.S. subsidies must be larger to make investing in clean energy projects make sense economically.<sup>41</sup>

Given changing geo-politics and Canada's comparative advantage as a strategic ally of the U.S. with a ready supply of critical minerals, the country and its provinces are uniquely positioned to leverage this opportunity -- but only if there is inter-governmental consensus in promoting the necessary regulatory reforms. As in the United States, this will require a "whole-government approach" to regulatory reform at both the federal and provincial levels of government to simplify the process and reduce the overall cost and time required to move major infrastructure projects forward. This includes not just new mining projects but also major infrastructure projects including brownfield sites, where advanced small modular [nuclear] reactors (SMRs) could be licensed and sited, as well as new renewable energy projects that need to come on line soon to address the referenced grid capacity issues that Hydro Quebec is likely to experience in the future. Here, on the issue of regulatory reform, the recommendations of the Toronto-based independent not-for-profit [C.D. Howe Institute](#) are right on point and should be further considered by Canadian policymakers.

If over time Ontario, Quebec and other key provinces are able to successfully move into production on newly discovered critical mineral assets, Canada could be well positioned to realize its objective of becoming a strategic critical minerals counterweight to China that offers a long-term source of ESG-friendly sourced critical minerals for North America. This would not only create new opportunities for investment and job creation but also position Canada to develop fully integrated clean-tech value chains linking their mining regions to advanced manufacturing centers for electric vehicles, battery storage, as well other key sectors including aerospace, telecommunications and defense.

<sup>40</sup>Amanda Stephenson, Canada's financial support for clean energy transition is competitive with U.S. report, says, Globe & Mail, April 24, 2023.

<sup>41</sup>Ibid



While the critical mineral resources of both Ontario and Quebec are indeed rich, the social license to exploit these natural capital resources are not guaranteed even though efforts are underway in both provinces to streamline regulatory approval processes. Here, the current opposition to the Matawinie mining project as well as protests by First Nations communities near northern Ontario's critical mineral rich Ring of Fire<sup>42</sup> are harbingers of future risks that proposed critical mineral mining projects in Ontario and Quebec are likely to encounter as these fast-growing provinces transition their respective economies to the green and digital economies. One approach to resolving potential regulatory standoffs is to directly involve indigenous land owners with an equity position in proposed mining projects to better align stakeholder interests.<sup>43</sup>

Finally, though Prime Minister Trudeau and Ontario's Premier Douglas Ford succeeded in their efforts to outbid Oklahoma in order to convince VW to establish its battery plant in St. Thomas, given the fast changing and competitive nature of the auto sector there are no absolute assurances that VW's plant will ever generate the direct and indirect economic benefits projected. Nor is it possible to guarantee the facility will remain in operation long-term given the rapid evolution of EV technology and the possibility that VW could be overtaken by events as slower charging lithium liquid ion batteries become replaced by next generation [fast-charging solid state EV battery technologies](#) or [hydrogen fuel cell battery technologies](#) (as Toyota is betting on in both cases).

As geo-political tensions with both China and Russia grow, the United States will need to turn to Canada as a more reliable source for critical minerals. Yet, if Canada's prospect for securing new value-added investment and jobs tied to the clean energy supply chain are nominal compared to other U.S. states, then it may prove more politically difficult to obtain environmental regulatory approval for some of the more controversial critical mining projects in Ontario and Quebec. After all, some key Canadian stakeholders may view the ESG costs as too high relative to the expected long-term economic benefits.

The United States and Canada have, of course, committed to closer cooperation related to critical minerals, as highlighted by the [recent meeting](#) held with U.S. President Biden and Prime Minister Trudeau in Washington, D.C. where both reinforced their mutual commitment to the [Roadmap for a Renewed U.S.-Canada Partnership](#) that includes, among other things, the JAPCM. That said, the political conditions in either country can change over time, including the political will for expanded cross-border cooperation at both the federal and provincial/state levels of government. Presently, both Ontario and Quebec are led by conservative, business-oriented leaders that have moved pro-actively to streamline regulatory approvals for large infrastructure projects, including critical mineral and renewable energy projects of cross-border importance. Still, as evidenced by the pair of electoral victories by more socially progressive liberal party members in Ontario's recent provincial elections,<sup>44</sup> the social license to mine or develop wind farms in Canadian provinces cannot be guaranteed. This speaks to the need for candid and inclusive bilateral dialogue about the social, environmental and economic trade-offs that must be made in the green transition and a shared understanding of how concerns of communities most directly impacted will be addressed.



<sup>42</sup>Dyvyra Rajagopal, [Canada First Nation protest Ontario's Ring of Fire mining plans](#), Reuters, July 20, 2023

<sup>43</sup>Giancarlo Da-Re, Matthew Funk and Rachel Zeimba, Volkswagen, then Stellantis: Billions for battery plants, but little on mines for raw materials, [The Globe and Mail](#), May 16, 2023

<sup>44</sup>Chris Young, [Liberals win pair of seats in Ontario provincial byelections](#), [the Globe and Mail](#), July 28, 2023



## ABOUT THE AUTHOR











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**APPENDIX A:**  
**ONTARIO'S STRATEGIC CLEAN TECH NEARSHORING INVESTMENTS**  
**(2020-2023)**

 <b>INVESTOR</b>	 <b>DESCRIPTION</b>	 <b>LOCATION(S)</b>	 <b>INVESTMENT (CDN\$)</b>	 <b>TAX INCENTIVE/ PRODUCTION SUBSIDIARY (CDN\$)</b>	 <b>FEDERAL GRANT FOR CAPITAL COSTS (CDN\$)</b>	 <b>PROVINCIAL GRANT (CDN\$)</b>	 <b>DIRECT JOBS</b>
GM Canada (April 2022)	Re-tool CAMI plant for EV commercial vans	Ingersoll, ON	<b>\$1 billion</b>	<b>\$518 million</b>			
Ford (Oct 2020)	Re-tooling to build EVs	Oakville, ON	<b>\$1.8 billion</b>	<b>590 million</b>			
Fiat Chrysler	Assembly of plug-in hybrids and battery EVs	Windsor, ON	<b>\$1.5 billion</b>				
Volkswagen (April 2023)	VWAGY battery plant	St. Thomas, ON	<b>\$7 billion</b>	<b>\$14.4 billion</b>	<b>\$700 million</b>	<b>\$500 million</b>	<b>3,000</b>
Stellantis (May 2022)	Re-tool of existing plants to produce EVs & fund Windsor Automotive Research and Development Centre	Brampton and Windsor	<b>\$3.6 billion</b>	<b>\$1.04 billion</b>			
LG Energy Solution and automaker Stellantis NV (July 2023)	Joint Venture EV battery plant	Windsor, Ontario	<b>\$5 billion</b>	<b>\$16 billion (\$5 billion - Ontario share)</b>			
Umicore	Cathode active material and precursor cathode active materials production	Ontario	<b>\$1.5 billion</b>				<b>700</b>
Honda (March 2022)	Re-tool its manufacturing operations to launch the next generation of hybrid-electric vehicles	Alliston, ON	<b>\$1.4 billion</b>	<b>\$262.3 million</b>	<b>\$131.6 million</b>	<b>\$131.6 million</b>	
Toyota	Battery manufacturing	Ontario					
Magna (Canada)	Expand EV battery enclosure facility	Brampton, ON	<b>\$470 million</b>			<b>\$23.6 million</b>	<b>1000</b>

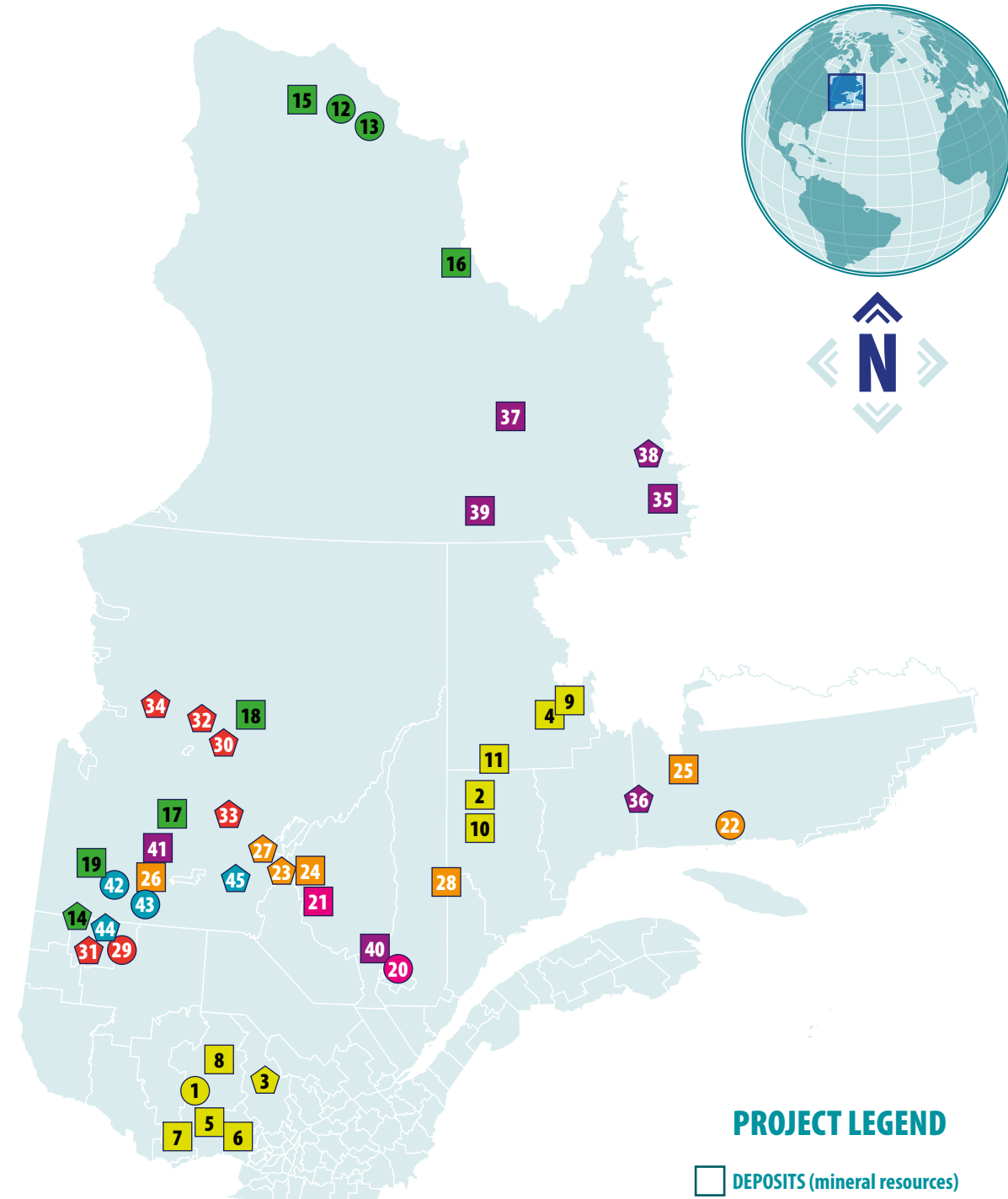
Sources: Government of Ontario; Invest Canada; Globe & Mail newspaper; Bloomberg Business



APPENDIX B:

QUEBEC'S CRITICAL MINERAL PROFILE

PROJECTS IN ABUNDANCE, IMMENSE POTENTIAL! CRITICAL AND STRATEGIC MINERALS IN QUÉBEC



PROJECT LEGEND

□ DEPOSITS (mineral resources)

◡ DEVELOPMENT OR CONSTRUCTIONS AND RUNNING - IN PROJECTS

○ MINES

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

\*\* Mines in maintenance

Source: Government of Quebec



Graphite

Several graphite projects are underway in Québec.

- 1 LAC-DES-ÎLES Northern Graphite Corp.
- 2 Lac Guéret Mason Graphite
- 3 Matawinie Nouveau Monde Graphite
- 4 Lac Knife Focus Graphite Inc.
- 5 La Loutre Lomiko Metals Inc.
- 6 Miller Canada Carbon
- 7 Bell Graphite Volt Carbon Technologies
- 8 Mousseau West Northern Graphite Corp.
- 9 Lac Rainy Nord Metals Australia Ltd
- 10 Berkwood Graphite Green Battery Metals Inc.
- 11 Lac Tétépisca Focus Graphite Inc.



Nickel, Copper, Cobalt and Platinum Group Elements

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

- 12 Reglan Glencore Canada Corporation
- 13 Nunavik Nickel Canada Royalties Inc.
- 14 Dumont Nickel Magneto Investments Limited Partnership
- 15 Bravo Jien Nunavik Mining Exploration Ltd.
- 16 Hawk Ridge Nickel North Exploration Corp.
- 17 Lac Rocher Victory Nickel Inc.
- 18 Nisk-1 Power Nickel
- 19 Grasset Wallbridge Mining Company



Niobium

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

- 20 Niobec Magris Resources Inc.
- 21 Crevier Les Minéraux Crevier Inc.



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 Vanadiumcorp Resource Inc.
- 27 Mont Sorcier Voyager Metals Inc.
- 28 Lac la Blache Splendor titanium Inc.



Lithium

Québec has high lithium potential.

- 29 North American Lithium\*\* Sayona Québec
- 30 Whabouchi Nemaska Lithium
- 31 Authier Sayona Québec
- 32 Rose Critical Elements Lithium
- 33 Moblan Sayon Nord/SOQUEM
- 34 James Bay Allken



Rare Earth Elements

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

- 35 Crater Lake Imperial Mining Group Ltd
- 36 Kwyjibo SOQUEM
- 37 Eldor (Ashram) Commerce Resources Corporation
- 38 Strange Lake – Sone B Torngat Metals Ltd
- 39 Kipawa (Zeus) Vital Metals Ltd.
- 40 Niobec – REE Zone Magris Resources
- 41 Carbonatite from Montviel Geomega Resources Inc.



Zinc and Copper\*








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

- 42 Bracemac-McLeod Glencore Canada Corporation
- 43 langlois (Grevet)\*\* Ressources Breakwater
- 44 Abcourt-Barvue Mines Abcourt Inc.
- 45 Lac Scott Yorbeau Resources Inc.



**APPENDIX C:**  
**QUEBEC'S STRATEGIC CLEAN TECH NEARSHORING INVESTMENTS**  
**(2020-2023)**

**QUEBEC'S STRATEGIC CLEAN TECH NEARSHORING INVESTMENTS**

<b>INVESTOR</b> 	<b>DESCRIPTION</b> 	<b>LOCATION(S)</b> 	<b>INVESTMENT (CDN\$)</b> 	<b>TAX INCENTIVE/ PRODUCTION SUBSIDIARY (CDN\$)</b> 	<b>FEDERAL/ PROVINCIAL LOANS (CDN\$)</b> 	<b>FEDERAL GRANT FOR CAPITAL COSTS (CDN\$)</b> 
General Motors/POSCO Chemicals Co. Ltd (S.Korea)	Joint venture to produce cathode active materials	Bécancour, QC	<b>\$600 million</b>		<b>\$152 million</b> (QC loan)	
Ford	Re-tooling to build EVs	Oakville, ON				
Lion Electric Co.	Battery manufacturing plant and innovation center for all electric medium and heavy-duty vehicles including school buses	Mirabel, QC	<b>\$496 million</b> ( <b>\$250M school bus electrification /\$246 million EV trucks</b> )	<b>\$100 million</b>		
Lion Electric Co.	Battery back plants					
BASF	Purchase of land for a future cathode active materials production	Bécancour, QC				
Electra Battery Materials	North America's first cobalt refinery for battery metals announces plans to develop a second cobalt processing facility in Canada in Quebec	Bécancour, QC	<b>\$100 million</b>			<b>\$10 million</b> (combined Fed/ON assistance)
Vale	Concluded a prefeasibility study to produce nickel sulfate	Bécancour, QC				
NanoOne	NanoOne acquires Johnson Matthey Battery Materials, enters into a joint production agreement with BASF for strategic investment agreement with Rio Tinto	Bécancour, QC	<b>\$10 million</b>			

Sources: Government of Ontario; Invest Canada; Globe & Mail newspaper; Bloomberg Business





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