

## **NORMATIVE FRAMEWORK**

### **SUPPORT PROGRAM FOR THE SCALING OF MINERAL OR PRIMARY PROCESSING FOR CRITICAL AND STRATEGIC MINERALS**

**2022-2025**

February 21, 2023 version

## 1. DESCRIPTION OF THE PROGRAM

### 1.1 Definitions

Unless the context indicates a different meaning, the following words or phrases mean:

**Agreement:** Agreement for awarding a grant under the Program. This agreement, signed between the Minister and an applicant selected following evaluation of the applications, confirms the awarding of a grant and the conditions associated with it.

**Applicant:** An entity that submits a project to the Ministère for financial assistance under the Program.

**Beneficiary:** Applicant whose project is subject to a financial assistance agreement to carry out an eligible project selected in the context of the Program.

**Capital expenditures (CAPEX):** Expenses incurred by the company to acquire a capital asset that will provide benefits to the company over a number of fiscal years.

**CSM:** Critical and strategic minerals. For a detailed definition of the list of CSMs, consult the Ministère's website<sup>1</sup>.

**Duration of the project:** Period between the effective date of the agreement and the date the work described in the agreement is completed.

**Energy efficiency<sup>2</sup>:** Make the best possible use of available energy to achieve higher energy efficiency. It is improved when less energy is used to produce a given product or service. The choice of the form of energy, the use of new technologies, more efficient equipment and processes, awareness-raising measures leading to changes in consumer behaviour, the training of people and the application of standards are all tools that can help achieve greater energy efficiency. Energy efficiency can also be defined as an improvement in the ratio, or other quantitative relationship, between the performance of a system, service, product or energy and the amount of energy introduced.

**Geochemical analyses:** Chemical analysis of rock samples using different analytical methods (e.g. X-ray fluorescence analysis, mass and emission spectrometry (ICP-MS and ICP-AES), atomic absorption, etc.).

**Geometallurgical testing:** Tests combining mineralogical analyses and certain tests on the physical (mechanical) properties of the rock (e.g. Bond index).

**Greenhouse gases (GHG):** A gaseous component of the atmosphere, of natural or anthropogenic origin, that absorbs and re-emits infrared radiation from the Earth's surface, the atmosphere and clouds. GHGs include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>).

**Mineral processing:** Ore processing that combines all the processes that release and separate valuable minerals from valueless minerals (gangue) present in an ore:

- **Release of minerals:** Crushing and grinding of ore to free every grain from its neighbours. The fineness of grinding is dictated by the grain size of the ore.
- **Separation of minerals:** Physical techniques to separate grains (minerals) with economic value from those that have no value in the current market. Separation produces a concentrate and tailings. Tailings are deposited in a tailings facility.

**Mineralogical analyses:** Analyses to determine the structural composition and chemical and physical properties of minerals.

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<sup>1</sup> <https://www.quebec.ca/en/agriculture-environment-and-natural-resources/mining/critical-and-strategic-minerals>

<sup>2</sup> Based on: Bédard, J. (1997). Vocabulaire de l'efficacité énergétique (energy efficiency lexicon). Les Publications du Québec.

**Mineralogical testing:** Tests using physical or physico-chemical processes to release and separate valuable minerals from others (gangue) in an ore.

**Mineralogy:** Studies the structural composition and chemical and physical properties of minerals.

**Minister:** Minister of Natural Resources and Forests.

**Operating expenses (OPEX):** Amounts incurred by the company to operate normally, excluding capital expenditures and financial expenses.

**Ore concentrate:** All grains of economic value resulting from the separation of ore.

**Ore:** Rock that contains economically valuable mineral(s). Ore therefore consists of grains (minerals) with an economic value and grains (minerals) with no economic value.

**Primary processing:** A chemical process primarily used to produce metals or any adaptation of metals to produce other substances (not necessarily a metal). This definition is also based on two conditions: the nature of the (chemical) process and its most common use, but does not attach a condition on the nature of the output.

**Process maturity levels (PML):** Forms an evaluation scale of the degree of maturity achieved by mineral or primary processing (see Appendix 1 for the different levels and their definitions).

**Program:** Support program for the scaling of mineral or primary processing for critical and strategic minerals.

**QPDCSM:** Québec Plan for the Development of Critical and Strategic Minerals 2020-2025.

**RENA:** Register of Enterprises Ineligible for Public Contracts (in French, Registre des entreprises non admissibles aux contrats publics).

**Scaling of a process (or scale-up):** A process that goes through several steps. At each step (scientific research, laboratory, pilot then demonstration plant), the process is evaluated, tested and optimized. Each step of progression requires specific equipment.

**Tailings:** Mineral substance discharged, the sludge and water, excluding the final effluent, from extraction or ore processing, and slag from pyrometallurgical operations, that have no economic value.

**Technological innovation:** Refers to products and processes whose economic, social, environmental or financial value has been increased. Product innovation is the introduction of a new or significantly improved product or service in terms of its characteristics or intended use. This definition includes significant improvements in technical specifications, components and materials, integrated software, usability or other functional characteristics. Process innovation is associated with the implementation of a new or significantly improved production or distribution method. This concept involves significant changes in techniques, hardware, or software.

## 1.2 Purpose

The supply of critical and strategic minerals (CSMs) is a major geopolitical issue on the world stage. Many nations are reviewing their strategy in this area to reduce their dependence on China, which dominates this market. To this end, some Canadian countries and provinces, including Canada and Ontario, are already working to develop their own CSM processing value chain. Knowing that the extraction of CSMs alone cannot ensure sustainable wealth creation for Québec, there is an urgency to position ourselves quickly.

In Québec, at this time, few projects have passed the construction or running-in stages (0.7 mines per year). Most of the CSM development projects are owned by new developers who are already struggling to conduct the necessary studies to determine whether or not a given CSM deposit should be produced commercially. This issue

manifests itself because of the difficulty in finding financing through the financial and banking sectors, among other reasons. Mining projects represent risky investments of hundreds of millions of dollars or even more than a billion dollars.

It was in this context that, in October 2020, the Gouvernement du Québec launched the [Québec Plan for the Development of Critical and Strategic Minerals \(QPDCSM\)](#). The goal of this major project is to promote the development and sustainability of CSM value chains by developing the mineral potential of Québec's CSMs, by prioritizing processing and maximizing the benefits in CSM-producing regions.

The program proposed in this normative framework helps with completing action 3.2.1 of the QPDCSM ("*Develop mining by-products and recycle more CSMs*"). The purpose of this support program is to finance semi-continuous pilot projects or demonstration plants in the mineral processing, primary ore concentrate processing, or tailings recovery sectors that involve CSMs. In its [2020-2023 Budget Plan](#) (section E 1.1.3), the Gouvernement du Québec confirmed its intent to move forward with this measure by increasing the funding initially planned to implement it.

The program is developed under paragraph 3 of section 12 of the [Act Respecting the Ministère des Ressources naturelles et de la Faune](#) (chapter M-25.2), which allows the Minister to develop programs for the conservation, development, operation and processing of mineral resources in Québec.

From a sustainable development perspective, rigorous selection criteria are used to ensure that the Ministère targets the most structuring projects. Beyond the technical aspects that characterize the economic viability of the project, other attributes are scrupulously analyzed to evaluate projects such as greenhouse gas reduction, environmental protection and social acceptability, among others.

Currently, there are no government support programs that provide specific support to address the specific needs of the scaling of mineral and primary ore concentrate processing or tailings development stages.

In addition, this program will develop an approach that meets the needs of mining developers, while ensuring predictability and credibility with potential investors.

It should be noted that the implementation of this program contributes to the development of the public policies of the Gouvernement du Québec, such as the Québec strategy for the development of the battery industry.

## **2. OBJECTIVES AND DURATION**

### **2.1 Objectives**

The program aims to:

- Advance projects to scale up mineral or primary processing of CSMs at the maturity level of a semi-continuous pilot project (PML 7) or demonstration plant (PML 8) to a higher level or to market (see Appendix 1 for a description of PML).
- Innovate by creating new processes or improving existing processes.

### **2.2 Duration**

The Program will take effect on the date it is approved by the Conseil du trésor and will end no later than March 31, 2025.

### **3. ELIGIBILITY AND CONDITIONS**

#### **3.1 Eligible Applicants**

To be eligible for the Program, applicants must:

- Be for-profit companies operating in the mining and industrial sector of Québec, be registered with the Registraire des entreprises du Québec and have an establishment in Québec.

#### **3.2 Ineligible Applicants**

Applicants in any of the following situations are not eligible for the Program:

- If they are a Ministère or budget-funded body.
- If they are in the Register of Enterprises Ineligible for Public Contracts (RENA), including their sub-contractors registered in the RENA.
- If they have failed to comply with their obligations after being duly served with formal notice in relation to the granting of previous financial assistance by a Ministère or agency of the Gouvernement du Québec.
- If they are insolvent, bankrupt, have filed a bankruptcy proposal or derive a benefit from a law relating to bankruptcy or insolvency.
- If they do not meet the high standards of integrity that the public can expect from a recipient of financial assistance from public funds.

The financial assistance may not be used to make a payment to an entity in any of the situations described in the preceding paragraphs.

#### **3.3 Eligible Projects**

To be eligible for the Program, the projects must:

- Target at least one of the minerals identified in the list of CSMs<sup>3</sup>.
- Have a rating of PML 7 or 8 inclusive and aim for a higher level or toward commercialization as described in Appendix 1.
- Help improve the competitiveness of Québec's mining and industrial sectors.
- Operate in a semi-pilot facility or demonstration plant in the province of Québec exclusively.
- Relate to at least one of the mining or industrial sectors in Québec as described in the table below.
- Relate to at least one of the natural power resources of the plants described in the table below.
- Address all the elements of the economic dimension of sustainable development described in the table below, based on the PML and project type.
- Address at least two elements of the environmental dimension of sustainable development, described in the table below.
- Address all elements of the social dimension of sustainable development, described in the table below.

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<sup>3</sup> <https://www.quebec.ca/en/agriculture-environment-and-natural-resources/mining/critical-and-strategic-minerals>

SECTOR, RESOURCES AND DIMENSIONS OF SUSTAINABLE DEVELOPMENT	ELEMENTS
Québec's mining and industrial sectors	<ul style="list-style-type: none"> <li>- Mineral processing</li> <li>- Primary processing</li> </ul>
Natural power resources for the plants	<ul style="list-style-type: none"> <li>- Ore extracted or to be extracted from Québec sub-soil</li> <li>- Surface mineral substances of Québec, as defined in Section 1 of the Mining Act<sup>4</sup></li> <li>- Ore concentrate that is or will be produced in Québec from an ore extracted from Québec's sub-soil</li> <li>- Tailings from processing ore extracted or that will be extracted from Québec sub-soil.</li> </ul>
Economic dimension	<p><b>PML 7 Development of a new process:</b></p> <ul style="list-style-type: none"> <li>- Demonstrate semi-continuous operation.</li> <li>- Validate and optimize the basic operating parameters.</li> </ul> <p><b>PML 7 Improvement of a process in an operational setting:</b></p> <ul style="list-style-type: none"> <li>- Demonstrate semi-continuous operation.</li> <li>- Validate and optimize the basic operating parameters.</li> <li>- Help improve the existing process.</li> </ul> <p><b>PML 8 Development of a new process:</b></p> <ul style="list-style-type: none"> <li>- Demonstrate the viability of the process.</li> <li>- Qualify their products on their market for structuring sectors in Québec.</li> <li>- Report results to investors with a view to investing for final construction.</li> <li>- Demonstrate the economic benefits in the region where they are located.</li> </ul> <p><b>PML 8 Improvement of a process in an operational setting:</b></p> <ul style="list-style-type: none"> <li>- Demonstrate the viability of the process.</li> <li>- Qualify these products on their market for structuring sectors in Québec.</li> <li>- Report results to investors with a view to investing for final construction.</li> <li>- Help improve the existing process.</li> <li>- Demonstrate the economic benefits in the region where they are located.</li> </ul> <p><b>PML 8 Setting up of a demonstration plant linked to an operating commercial plant:</b></p> <ul style="list-style-type: none"> <li>- Help improve and optimize a process in an operational setting on an industrial scale by setting up a demonstration plant.</li> <li>- Demonstrate the economic benefits in the region where they are located.</li> </ul>
Environmental dimension	<ul style="list-style-type: none"> <li>- Consideration of greenhouse gas mitigation measures and energy efficiency improvements.</li> <li>- Mitigation of the impact of discharges into the environment.</li> <li>- Protection of the environment.</li> </ul>
Social dimension	<ul style="list-style-type: none"> <li>- Protection of worker safety.</li> <li>- Social acceptability.</li> </ul>

<sup>4</sup> <https://www.legisquebec.gouv.qc.ca/en/document/cs/m-13.1>

- Maximum duration of three years. At the beneficiary's request and with the Ministère's acceptance, a maximum extension of one (1) year may be granted under exceptional circumstances and added to the period provided for in the Agreement. In such a case, the beneficiary must demonstrate exceptional circumstances, the project must be started and the additional time requested must effectively allow the entire project to be completed. The assistance granted at the outset may not be increased after this new deadline.

### 3.4 Eligible Applications

To be eligible for the Program, the application for financial assistance must be:

- Submitted before October 31, 2024.
- Be submitted on the Ministère's form available on their website, be completed in French to the satisfaction of the Ministère and be signed and dated by an authorized signatory.
- Provided with a detailed description of the activities to be carried out as part of the project, the budget, the timetable for completion and a statement of the objectives pursued and expected results.
- Be accompanied by proof that the applicant owns the semi-pilot facility or demonstration plant located in Québec where the project will be carried out or that it has the required authorizations to carry out the project.

To be eligible, the application must be accompanied by the following technical documents to demonstrate that the project is least at level PML 7 – semi-continuous pilot or PML 8 – demonstration plant, as described in Appendix 1 "Process Maturity Level", providing the following technical documents with the application for financial assistance:

- The technical reports describing tests already carried out in the laboratory, at the pilot scale in batch mode and, if applicable, in- semi-continuous mode.
  - These reports must contain a photo or video section of the assemblies used at the pilot scale in batch mode and, if applicable, in- semi-continuous mode;
  - These reports must contain a description of the samples used for batch and semi-continuous tests, as appropriate, and their representativeness with the mineral deposit.
- A copy of all permits and/or authorizations obtained prior to filing the application, whether for the construction, purchase, lease or operation of the project. The required permits and/or authorizations must be obtained at the time specified in the agreement.
- Existing technical-economic studies for the project (PEA, PFS or FS).
- A table showing the progression of scaling of the process from PML 3 to PML 7 or 8, in addition to those for the planned commercial plant. The table should present the scaling at each of the steps indicating the quantity of samples used and the quantity produced, the dimensions of major equipment (type, quantity, etc.) and their processing capacities (flow rate, solid %, retention time, etc.). If multiple tests have been carried out for a PML, they must also be presented. See Appendix 2 for an example of the above-mentioned table.
- The required authorizations for projects for the construction or operation of a semi-pilot facility or demonstration plant subject to the Regulation respecting the environmental impact assessment and review of certain projects (CQLR c. Q-2, r 23.1 (Schedule I - Part II: Section 17, Section 20 and Section 23)).
- For projects using ore or tailings, demonstrate that steps have been taken to comply with the Mining Act (CQLR, c. M-13.1) (e.g. the rights to operate the resource and a restoration and redevelopment plan, etc.).
- All quotations or contracts for construction, rental, purchase, mobilization and installation for the project and equipment, as well as for the production of plans and estimates of innovative equipment or technologies.

- All quotations or contracts for consulting services provided by Québec universities or non-profit organizations (NPOs) with expertise in mineral or primary processing and involved in the various research and development (R&D) niches associated with the project, as applicable.

To be eligible, the application must be accompanied by the following technical documents to demonstrate that the project is least at level PML 7 – semi-continuous operation or PML 8 – demonstration plant:

- A financial arrangement (costs and financing of the project with details on the financing confirmed or not at the time of submission of the application).
- Annual audited financial statements for the last two years and the most recent interim financial statements.
- Financial forecasts (for PML 7, the financial forecasts must be over 18 months and for PML 8, the financial forecasts must be over 36 months).
- For PML 8, the applicant's business plan including the marketing strategy for the CSMs in question, the summary market analysis as well as the financing strategy (for PML 7, to be submitted only if the business plan has already been carried out).

### **3.5 Conditions to be Met**

To remain eligible for the Program, recipients must:

- Meet all of the Program's eligibility requirements.
- Provide the Ministère with any information necessary for the monitoring or evaluation of the Program.

## **4. SELECTION OF PROJECTS**

### **4.1 Eligibility Analysis**

The Ministère initially sends an acknowledgement of receipt when the application is submitted. This date matches the eligibility date for expenses. Sending of the acknowledgement of receipt does not guarantee the eligibility of the project.

The Ministère then analyzes the eligibility of applicants, projects and applications ensuring that they comply with all relevant evaluation elements mentioned in this normative framework and that they include all the required documents, if applicable.

The Minister confirms the date on which the application was received and the date on which the application was found to be admissible, complete and eligible to the applicant in writing.

In all cases, compliance with the eligibility criteria does not guarantee payment of financial assistance.

### **4.2 Project Evaluation**

The projects are evaluated by an evaluation committee that reports to the Ministère, as well as representatives of the Ministère de l'Économie, de l'Innovation et l'Énergie. Representatives from other departments or government agencies may be added depending on the nature of projects submitted under the Program. Members of the selection committee will have to sign declarations of confidentiality and to confirm there are no conflicts of interest.

The evaluation committee is responsible for evaluating projects according to the conditions and evaluation criteria set out in this normative framework.



### 4.3 Evaluation Criteria

The evaluation committee will analyze the projects according to the following criteria and weightings:

1) Project quality (50%)

- Project clarity
- Relevance of the contracts presented according to project objectives
- Ability to increase the capacity of the mining or industrial sector, technical and technological challenges to be addressed.
- Relevance of progress indicators for the project and decision-making milestones.
- Realistic schedule
- Credible financial arrangements
- Applicant's financial capability to complete the project.

2) Potential benefits across the three dimensions of sustainable development (40%)

- Economic dimension (20%): Demonstrate that the project meets the following elements according to its PML and project type:

PML 7 Development of a new process:

- Demonstrate semi-continuous operation.
- Validate and optimize the basic operating parameters.

PML 7 Improvement of a process in an operational setting:

- Demonstrate semi-continuous operation.
- Validate and optimize the basic operating parameters.
- Help improve the existing process.

PML 8 Development of a new process:

- Demonstrate the viability of the process.
- Qualify their products on their market for structuring sectors in Québec.
- Report results to investors with a view to investing for final construction.
- Demonstrate the economic benefits in the region where they are located.

PML 8 Improvement of a process in an operational setting:

- Demonstrate the viability of the process.
- Qualify these products on their market for structuring sectors in Québec.
- Report results to investors with a view to investing for final construction.
- Help improve the existing process.
- Demonstrate the economic benefits in the region where they are located.

PML 8 Setting up of a demonstration plant linked to an operating commercial plant:

- Help improve and optimize an existing operating process on an industrial scale by setting up a demonstration plant (PML 8).
- Demonstrate the economic benefits in the region where they are located.

- Environmental dimension (10%): Demonstrate the potential benefits for two of the following elements:

- Consideration of greenhouse gas mitigation measures and energy efficiency improvements.
- Mitigation of the impact of discharges into the environment.
- Protection of the environment.

- Social dimension (10%): Demonstrate the potential benefits for the following elements:
    - Protection of worker safety.
    - Social acceptability.
- 3) Quality of project management (10%):
- The applicant's project manager must have a minimum of five years experience in managing a mining or industrial project.
  - Quality, uniqueness and value added to the mineral or primary processing project by universities or NPOs involved in the various R&D niches associated with the project, as applicable.
  - Relevant qualifications and experience of the consultants and team assigned to the project.

The passing mark for each project is set at 70%.

Applications for financial assistance will be submitted and processed on an ongoing basis. Financial assistance will be awarded in the manner described in the agreement, in accordance with this normative framework.

#### **4.4 Announcement of the decision and signing of an agreement**

Once a project is evaluated and a decision is made, the Ministère will inform the applicant about the decision in writing.

If an application is accepted, a grant agreement must be signed between the applicant and the Minister to confirm the awarding of a grant and the conditions associated with it.

### **5. AMOUNT, AWARD AND PAYMENT OF FINANCIAL ASSISTANCE**

#### **5.1 Amount of Financial Assistance**

The financial assistance provided by the Minister will correspond to the lesser of the following amounts, according to the PML:

- For PML 7: A maximum of 33% of eligible expenses up to a maximum of \$1M per project.
- For PML 8: A maximum of 33% of eligible expenses up to a maximum of \$10M per project.

In addition, for existing and new demonstration plants, any direct revenue generated during the life of the Project reduces the amount of financial assistance provided on the same scale.

A beneficiary may participate in the Program more than once, as long as each application pertains to a distinct project and/or a different PML.

#### **5.2 Eligible Expenses**

For expenses to be eligible under the Program, they must be necessary, justified and directly attributable to the completion of the project and involve one of the following activities:

Development of a new process (PML 7 or 8) or setting up of a demonstration plant linked to a commercial plant (PML 8):

- Costs related to the purchase of an existing building, the construction, installation and laying out of the plant as well as the acquisition, mobilization and installation of equipment or innovative technologies (CapEx).

- Costs related to the production of plans and estimates for equipment or innovative technologies.
- Costs related to renting a building for the installation of equipment, as well as costs for the acquisition, mobilization and installation of equipment or innovative technologies provided that all of the equipment belongs to the beneficiary.
- Fees for consulting services provided by a Québec university or NPO involved in the various R&D niches if the beneficiary demonstrates that they do not have this expertise in mineral or primary processing necessary to complete the project. The relevance of this expense must be demonstrated for the operational phase of the project. The maximum amount of grant allocated to this expenditure may not exceed 2.5% of the maximum amount of grant awarded to the beneficiary.
- Rental of space or premises belonging to a Québec university or NPO involved in the various R&D niches associated with the project, as well as the acquisition, mobilization and installation costs for equipment or innovative technologies provided that all of the equipment and technologies belong to the beneficiary.
- For demonstration plants, costs of purchasing analytical equipment deemed essential for its proper functioning (must be demonstrated for the duration of the project).
- Costs for renting major equipment if the time for acquiring equipment is excessive (must be demonstrated for the duration of the project (e.g. vertimill)).
- Costs for producing the financial report referred to in section 6.1 of the normative framework.

Note: For demonstration plants that are already operating and new demonstration plants, any direct revenue generated during the life of the Project reduces the amount of financial assistance provided on the same scale.

Improvement of a process in an operational setting (PML 7 or 8) or setting up of a demonstration plant linked to a commercial plant (PML 8):

- Costs related to the production of plans and estimates for equipment or innovative technologies.
- Costs for purchasing innovative equipment or technology.
- Costs for the mobilization and installation of innovative equipment or technologies.
- Fees for consulting services provided by Québec universities or NPOs involved in the various R&D niches if the beneficiary demonstrates that they do not have the expertise in mineral or primary processing necessary to complete the project. The relevance of this expense must be demonstrated for the operational phase of the project. The maximum amount of grant allocated to this expenditure may not exceed 2.5% of the maximum amount of grant awarded to the beneficiary.
- Costs for renting major equipment if the time for acquiring equipment is excessive (must be demonstrated for the duration of the project (e.g. vertimill)).
- Costs for producing the financial report referred to in section 6.1 of the normative framework.

Note: For semi-continuous pilot plants or existing demonstration plants, the equipment and technologies already installed must be the property of the beneficiary.

To be eligible, expenses must be incurred no earlier than the date of acknowledgement of receipt of the application deemed eligible by the Minister. Accordingly, expenses incurred by the applicant before the application is deemed eligible by the Minister are incurred at the expense of the applicant. The applicant therefore assumes any risk or inconvenience that may arise from the Minister's acceptance or rejection of the application, in whole or in part, under the Program.

For projects contributing to Action 3.2.1 of the QPDCSM ("*Develop mining by-products and recycle more CSMs*") that have already received a favourable recommendation of eligibility from the Ministère, the commitments and expenditures related to the Program

may be made by an applicant as of the date of receipt of the admissible application by the Ministère. These expenses must not be prior to April 1, 2022.

All expenses must be accounted for in accordance with generally accepted accounting principles and may be subject to an accounting audit by the Ministère, as needed.

No excess costs for activities or projects will be accepted for additional financial assistance.

Fees for professional services may not exceed those resulting from the ["Schedule of Fees" document from the Association des firmes de génie-conseil du Québec](#). Proof of expenses may be requested and must be provided to validate eligible expenses.

### **5.3 Ineligible Expenses**

The following expenses are not eligible under the Program:

- costs related to building the commercial plant
- costs for purchasing land
- any expenses allocated to a Québec university or NPO involved in the various R&D niches, with the exception of eligible expenses described in the previous section; costs for the commissioning, running-in and operation of the plant or equipment (OPEX)
- costs related to the detailed engineering of the pilot or demonstration plant or for the commercial plant
- costs for producing a technical-economic study or business plan
- costs for additional tests on processes in a research centre, as well as costs related to shipping equipment
- costs for marketing to the customer
- costs for sending samples to future buyers
- equipment rental charges, except in exceptional cases (see clause 6.2 Eligible Expenses)
- fees for external analyses, as well as transportation costs related to- these analyses
- costs for purchasing equipment , except in exceptional cases (see clause 6.2 Eligible Expenses)
- the amount of the financial guarantee for pilot or demonstration plants to process ore or for primary processing plants using tailings
- expenses incurred to prepare the application for financial assistance
- operating expenses and related costs paid by the beneficiary (e.g. staff compensation, maintenance, supplies, consumables, travel, accommodation and meals)
- transactions between related companies or partners
- any types of taxes and income taxes
- travel and training expenses
- current salary expenses and employee benefits
- loan repayment
- the refundable portion of the Quebec sales tax (QST) and goods and services tax/harmonized sales tax (GST/HST) and severance benefits
- any payments that may be made to entities registered in the RENA
- any other expenses not directly associated with the project

### **5.4 Payment of Financial Assistance**

The financial assistance will be paid to the beneficiary according to the following terms:

- A first payment of up to 40% of the financial assistance following approval by the Ministère of purchase orders, service specifications, lease or real estate sales contract requiring a deposit, related to the completion of the project and which are required by the Ministère according to the type of project.
- Subsequent payments, the number of which is determined according to the duration and complexity of the project, are awarded following approval of progress reports by the Ministère and defined in the agreement and this normative framework. The amounts may total a maximum of 45% of the financial assistance.
- A final payment up to a maximum of 15% of the financial assistance following approval of the final report and the financial report by the Ministère and defined in the agreement and this normative framework.

The final payment of financial assistance is conditional on the beneficiary providing all the data necessary to assess the results of the Program, including information necessary to measure the performance indicators provided for in this normative framework and in the Program's monitoring and preliminary evaluation framework. The financial assistance agreements will specify the terms and conditions applicable.

Each payment is conditional on the availability of sums in the Natural Resources Fund, in accordance with the provisions of sections 21 and 51 of the Financial Administration Act (CQLR, c. A-6.001).

## **5.5 Stacking of Financial Assistance and Limitations**

The calculation of stacked direct or indirect financial assistance received from departments, agencies and Crown corporations of the governments of Québec and Canada, including tax credits, as well as municipal entities that are not direct beneficiaries of the program, must not exceed 75% of the eligible expenses.

For the purposes of the rules for calculating public financial assistance, the term "municipal entities" includes municipal bodies in section 5 of the Act respecting access to documents held by public bodies and the Protection of personal information (CQLR, c. A-2.1).

The asset referred to in subparagraph 1 of the first paragraph of section 89 of the Act establishing the Eeyou Istchee James Bay Regional Government (CQLR, c. G 1.04) is not considered in the rule on stacked calculation in this standard.

For the purposes of the rules for calculating the stacked rate, all forms of financial assistance awarded by a public body must be calculated at 100% of their value, whether they are repayable or not. Furthermore, financial contributions from a public shareholder previously in the body of shareholders or participating in a concurrent round of financing of the participant may be excluded from the stacked calculation if made in the context of a financing round in which private investors participate and which aims to support the entire project and not only the portion of the project that is the subject of the financial contribution. To not to be considered in the stacked calculation, the financial contribution thus awarded must be under market conditions and under the same conditions as those offered to investors participating in the said round.

In addition, financial assistance from the Business Development Bank of Canada (BDC), Farm Credit Canada (FCC) and La Financière agricole du Québec (FAQ) is to be considered as private contributions if they do not offer any conferred benefit, or if they are agreed to on market conditions.

Any other new financial assistance must be reported to the Ministère and, if applicable, the portion that exceeds the maximum expected stacked threshold should be deducted from the Ministère's financial assistance.

## **6. CONTROL AND ACCOUNTABILITY**

### **6.1 Accountability Toward the Ministère**

#### Follow-up report

The beneficiary must submit follow-up reports to the Ministère according to the schedule and specifications set out in the agreement, which include the name of the project, the project summary and its objectives, a description of the tasks completed and the results obtained, the technical details of the process and equipment used, the consultants and suppliers involved, a description of the problems and irregularities encountered, a description of the consequences that modifications may have on the objectives of the project, a revised schedule, a statement of expenses incurred including receipts, as well as the results in relation to the three dimensions (economic, social and environmental) and any other elements provided for in the agreement.

#### Final report

The beneficiary must submit a final report to the Ministère no later than 30 days after completion of the Project, in accordance with the specifications set out in the Agreement which include, but are not limited to, the project summary, statements of revenues and expenses, the demonstrated process and results of the project, statement of results to investors, conclusions and any other elements included in the agreement.

#### Financial report

Every beneficiary must provide a financial report to the Ministère that complies with the accounting rules in effect and has been prepared by a chartered professional accountant holding the appropriate licence. For all government contributions, beneficiaries receiving financial assistance must provide:

- An audit engagement, if they received \$150,000 or more.
- A review engagement, if they received between \$50,000 and \$149,999 inclusive.
- A compilation engagement, if they received between \$25,000 and \$49,999 inclusive.

This report must include statements of account for expenses incurred and paid and supporting documents (invoices, proof of payment, etc.).

#### Annual post-project monitoring report

The beneficiary must provide annual post-project monitoring reports to the Ministère to inform the Ministère of what the beneficiary intends to do with the results of the project. As specified in the agreement, the reports should include the name of the project, the period covered by the report, a presentation of the results of the project and the main conclusions. A total of three annual monitoring reports must be submitted to the Minister after the project is completed.

#### Follow-up meetings

The project is monitored throughout its duration, from construction to running-in, but also during its operation, for a maximum period of three years.

Follow-up meetings should be held at the request of the Ministère. The beneficiary should prepare a PowerPoint presentation and send it to the Ministère at least one working week before the meeting (in person or virtual). The information to be presented by the beneficiary at these meetings will be specified by the Ministère at the time of their request.

### **6.2 Accountability Toward the Conseil du trésor**

Accountability for the projects funded by the Program, presented in the form of an evaluation, will be sent to the Secrétariat du Conseil du trésor (Sous-secrétariat aux politiques budgétaires et aux programmes), no later than November 30, 2024, in a format and following conditions to be agreed in advance. This evaluation will focus on the following results and indicators:

<b>RESULTS INDICATORS</b>				
<b>Indicator</b>	<b>Criterion (Target)</b>	<b>Description</b>	<b>Source</b>	<b>Completion Schedule</b>
<ul style="list-style-type: none"> <li>Number of technological innovations (new process or process improvement) that have completed the technology readiness level (TRL) 8</li> </ul>	At least one technological innovation within the next five years	Number of projects that have successfully completed TRL 8	Final reports	At the end of the program
<ul style="list-style-type: none"> <li>TRL progress of projects</li> </ul>	Have progressed by at least 1 TRL by the end of projects	Measures the average TRL of projects before and after awarding of the grant	Final reports	At the end of the program
<b>OTHER INDICATORS</b>				
<b>Indicator</b>	<b>Criterion (Target)</b>	<b>Description</b>	<b>Source</b>	<b>Completion Schedule</b>
<ul style="list-style-type: none"> <li>Investment (in \$ and %) in projects by stakeholders</li> </ul>		<ul style="list-style-type: none"> <li>Sum of amounts invested in supported projects</li> <li>Sum of amounts invested by the private sector</li> <li>Sum of amounts paid under the Program</li> <li>Sum of amounts paid by the governments</li> </ul>	Ministère's administrative follow-up	Annual
<ul style="list-style-type: none"> <li>Number of projects submitted / selected / completed under the Program</li> </ul>		<ul style="list-style-type: none"> <li>Number of grant applications submitted to the Program</li> <li>Number of projects selected</li> <li>Number of projects completed</li> </ul>	Ministère's administrative follow-up	Annual

## **7. OTHER OBLIGATIONS**

### **7.1 Obligations to call for public tenders and implement an equal access to employment program**

For the performance of construction work, except for work performed in-house, the municipal bodies and the public bodies subject to the Act respecting contracting by public bodies (c. C-65.1) are subject to the contract adjudication rules applicable to them. Other organizations eligible for the grant program are required to call for public tenders for a minimum of 15 days for any construction contracts involving an expenditure equal to or greater than \$100,000.

A Québec participant employing more than one hundred (100) people in Québec, who applies for a grant of one hundred thousand dollars (\$100,000) or more, must commit to establish an equal access to employment program compliant with the Québec Charter of Human Rights and Freedoms (CQLR, chapter C-12). To demonstrate their commitment to implementing such a program, applicants must attach a "Commitment to the Program" to their application or, if they have already submitted a "Commitment to the Program", they must indicate the official number of the "Attestation of Commitment" they hold or the number of the "Certificate of Merit", if applicable. If the application is from outside Québec, but from within Canada, and the participant employs more than one hundred (100) people

in Canada and is applying for a grant of one hundred thousand dollars (\$100,000) or more, the participant must first provide an attestation that they are participating in the employment equity program of their province or territory or, failing that, in a federal employment equity program.

## **7.2 Program Management**

The Ministère reserves the right to:

- Terminate the financial assistance and/or require repayment if the beneficiary does not comply with any of the requirements set out or if the project does not meet the planned objectives.
- Reduce the financial assistance by a percentage or by an amount equivalent to the surplus established if the eligible expenditure is less than expected and/or if the combined assistance, during the period covered by the financial assistance, exceeds the expected stacked rate.
- Refuse to award financial assistance or stop paying the financial assistance if the applicant or beneficiary do not meet the high standards of integrity that the public can expect from a recipient of financial assistance of public funds.
- Limit the number of applications selected, in order to respect the budget envelope and the amounts available.
- Gather information to enable them to ensure that the project has been carried out as planned, to evaluate their program and its efficiency, and to evaluate the costs and expenses associated with the projects or the Program.
- Inform the public of the allocation of financial assistance to the beneficiary (the amount, the project and its impact).

The Ministère may not, in any case, be held liable for any damage or prejudice resulting from the application of the Program.



## **APPENDIX 1**

### **PROCESS MATURITY LEVELS**

According to the book Metallurgical Plant Design (MPD), published by the Canadian Institute of Mining, Metallurgy and Petroleum, it takes ten (10) years or longer to develop a new process from concept to commercial plant Twigge-Molecey (2009). The steps to be followed are:

- Theoretical study or design (review of technical literature).
- Laboratory testing.
- Pilot plant testing.
- Demonstration plant or- semi-commercial scale.
- Commercial plant.

The steps mentioned in the MPD overlap with the grid used by Innovation, Science and Economic Development Canada (ISED). The ISED grid includes nine levels that cover the maturity of a project (technology readiness level). Level 1 is basic research and level 9 is the last step before a product is commercialized.

A new grid has been adapted to that of the ISED to better represent the scaling up of a mineral or metallurgical process. The grid has been reduced to 8 levels. The following table presents the process maturity levels.

## Process Maturity Levels - PML Grid

Phase	Process Maturity Levels	Description
Design	PML 1: Scientific research	Scientific research begins with the potential properties of a process observed in the physical world. These fundamental properties are the subject of reports in the literature.
	PML 2: Pre-laboratory	The emphasis is placed on an increased understanding of science, on the corroboration of fundamental scientific observations made during the work at PML 1, in geometallurgical testing and geochemical analyses. The process is developed on paper.
Laboratory	PML 3: Preliminary tests	Research and development activities begin. Applications move from the theoretical stage to the experimental stage. First exploratory tests.
	PML 4: Step-by-step optimization	Development and optimization of the process step by step. Each piece of laboratory equipment is tested independently of the process flow diagram and the parameters (% solids, agitation speed, residence time, quantity of chemicals, etc.) are optimized. The equipment used is not representative of equipment used in industry. Tests are carried out on a given number of kilograms.
	PML 5: Semi-continuous testing	Development and optimization of the process on a continuous basis. Representation of the process flow diagram to optimize the parameters (e.g. feed rate, etc.). The equipment used is not representative of equipment used in industry. Tests are carried out on a given number of kilograms. Closed-loop tests and variability studies are carried out.
Pilot	PML 6: In batch mode	A process that represents an almost desired configuration is developed on a much smaller scale than an industrial scale. The equipment is representative of the planned plant, but with much less capacity. Each piece of equipment is tested independently.
	PML 7: Semi-continuous	A process that represents an almost desired configuration is developed on a much smaller scale than an industrial scale. The equipment is representative of the planned plant, but with much less capacity. At this stage, there is a better understanding of the operations. Operational procedures and process optimization are to be completed. Some steps are combined (continuous processing, more than 50% of the equipment). Continuity of the process for at least 72 hours of operation.
Demonstration	PML 8: Demonstration plant	Construction and/or installation of a demonstration plant whose equipment is representative of the planned plant, but with reduced capacity. The process is dismantled in an operational environment and the manufactured product will be qualified by future buyers. At this stage, the final design of the process is almost complete. The process is proven to be functional in its final form and under the expected conditions. This usually represents the end of the process development stage. At this stage, the operations are well understood, the operational procedures are developed and the final adjustments are made.

The five (5) development steps described in the MPD can be associated with the eight (8) levels in the PML grid as follows:

- Step 1 (PML 1 and 2): Theoretical study or design phase (review of technical literature): Research and study the different process options. Measurements of basic parameters (geometallurgical).
- Step 2 (PML 3, 4 and 5): Laboratory phase. Test and model the process.
- Step 3 (PML 6 and 7): Pilot phase: Check and improve the process diagram.
- Step 4 (PML 8): Demonstration phase: Prove the final design of the process.
- Step 5 (no equivalent in the PML grid): Commercial scale.

## APPENDIX 2

**A table that shows the progression of scaling of the process from PML 3 to PML 7 or 8.**

PML	Step	Major Equipment	Processing Capacity	Sample Quantity Used	Quantity Produced
3	Laboratory Preliminary testing	Reactor 1 xxxml	xxml.h at x% solid {xxg/h of solid} Retention time xh	xxg	xxg
4	Laboratory Step-by-step optimization	Reactor 1 x xxml	xxml.h at x% solid {xxg/h of solid} Retention time xh	xxkg	xxkg
5	Laboratory Semi-continuous testing	Reactor 1 x xL	xL/h at x% solid {xxg/h of solid} retention time xh	xxkg	xxkg
6	Pilot in batch mode	Reactor 3 x xL	xL/h at x% solid {xxg/h of solid} retention time xh	xxkg	xxkg
7	Pilot in semi-continuous mode	Reactor 3 x xL	xL/h at x% solid {xxg/h of solid} retention time xh	xxx kg	xx kg/h
8	Demonstration	1 line of 6 x xxm <sup>3</sup>	xxm <sup>3</sup> /h at x% solid {xT/h of solid} retention time xh	xx xxx t/year	x xxx t/year
N/A	Commercial plant	2 lines of 6 x xxm <sup>3</sup>	xxxm <sup>3</sup> /h at x% solid {xxT/h of solid} retention time xh	xxx xxx t/year	xx xxx t/year