



Advanced Materials Moving Forward

GUIDE FOR THE SUBMISSION OF FUNDING APPLICATIONS

Call for Research and Innovation
Projects in the Field of Advanced Materials



Call for Research and Innovation Projects in the Field of Advanced Materials – R27

Deadline for letter of intent: October 30, 2023, at noon

Application deadline: December 4th, 2023, at noon

1. Objectives

- a. PRIMA Québec, le Pôle de recherche et d'innovation en matériaux avancés, animates and supports the ecosystem of advanced materials by favouring collaborative innovation for the economic development of Québec. PRIMA is the privileged catalyst between industrial and research circles.
- b. This call for projects seeks to support innovation in the field of advanced materials by funding **collaborative research projects** designed to accelerate the development of advanced materials as a practical response to some of Québec's major industrial challenges. It has been developed to help establish collaborations between industry and the research sector (universities, CCTT or public research centres¹).
- c. Strengthen the capacity for technological innovation of companies and investment communities and materialize the development and transfer of technology through concrete benefits.
- d. Showcase research that has commercial potential.
- e. Develop and train highly qualified workforce.
- f. This call for projects includes two types of funding requests that differ according to the size of the company:
 - **SME COMPONENT:** Application for funding for a collaborative project with at least one SME, less than 250 employees (world total, including related companies) established in Québec and carrying out internal production or R&D activities there, as well as at least one university or a CCTT or a public research centre. The SME must not be controlled by a large company, national or international (example <50% shareholding). For an SME owned by a company at 50% or more, the total number of employees must be less than 250 to be recognized as an SME.
 - **LC COMPONENT:** Application for funding for a collaborative project with at least one LARGE COMPANY (LC), established in Québec and carrying out internal production or R&D activities there, as well as at least one university, a CCTT or a public research centre.
- g. Projects submitted must clearly present the benefits of the projects for research, training and economic development.
- h. It is strongly encouraged to contact a PRIMA advisor to review the application before submission.

¹ The list of recognized eligible public research centers is available at the [following link](#).



2. Recommended Themes

In keeping with its strategic plan, PRIMA Québec recommends the submission of projects dealing with the development of advanced materials applied to key sectors in Québec like transportation and infrastructure, energy, environment, electronics, health, chemistry and critical and strategic minerals.

Technologies targeted by this project call include primarily:

- **New materials:** Polymers, elastomers, biomaterials, metals, innovative fillers, cellulosic filaments, natural and synthetic fibers, nanomaterials, quantum material, etc.
- **Formulated materials or high-performance finished or semi-finished products:** Composites (TD or TP), rubbers, alloys, ceramics, smart textiles, flexible materials, membranes, thin layers, coatings, biocompatible materials, encapsulation, sensors, quantum technologies, etc.
- **Implementation processes, scaling and new characterization techniques:** Additive manufacturing and 3D printing, modification and surface treatment, micro/nanofabrication, tools, new characterization tools, modelling and simulation, shaping processes, quantum calculus, etc.
- **Use of artificial intelligence** with advanced materials for production, integration or implementation processes or characterization technique.

3. Participants

Eligible Candidates

Applications must be submitted by Québec research establishments. Universities, CCTTs or public research centres are eligible (if the research centre is not on the list, please contact a PRIMA advisor to check the status [public or private] with the MEIE). They must allow the training of highly qualified personnel (HQP).

Eligible Company

- It is necessary to have at least one company with a presence in Québec (**production or R&D**). Investment funds are not considered an eligible company. It is necessary that the company be an active participant and be able to implement the benefits of the project.
- Foreign and Canadian companies are admitted as second (or third, etc.) industrial partners.
- **Related companies will be considered as one and the same company in the project.** Related meaning that “the relationship between the companies would be such that one has the ability to exercise, directly or indirectly, control or significant influence over decisions relating to the financing or operation of the other.”
- The following clienteles are not eligible (either individually or in a business combination):
 - Companies’ majority controlled directly or indirectly by a government (provincial or federal), a municipal entity, or a business majority-owned by a Crown corporation. Their contributions will be considered a public contribution.
 - A company under the protection of the Companies’ Creditors Arrangement Act or the Bankruptcy and Insolvency Act;
 - A company listed on the register of companies not eligible for public contracts;
 - A company that, during the two years preceding the application for financial assistance, has failed to meet its obligations after having been duly put in default in connection with



the granting of previous financial assistance by the Ministère de l'Économie, de l'Innovation et de l'Énergie.

- **Hydro-Québec** is considered, by default, as a public research center. However, the latter can be considered as an eligible company under certain conditions, see **appendix A** for details.
- Foundations and NPOs may be eligible as a 2nd tier company. However, they must be a **willing participant**: it must have the capacity and bring their expertise to the project and benefit from the direct benefits of the project.
- Startups are eligible; however, the MEIE may request additional information to ensure the company's involvement in the project and its R&D, production capacities and be able to implement the benefits of the project.

PRIMA Québec Membership

All industrial and academic organizations or public research centres participating in a project **are required to be members of PRIMA Québec at the time the project is submitted** and must remain members throughout the duration of the project.

To become a member of PRIMA Québec: <https://www.prima.ca/en/product/prima-quebec-membership/>

0-50 employees	280 CAD
51-249 employees	450 CAD
250-499 employees	650 CAD
500 employees and (+)	1 000 CAD
Universities	2 000 CAD
CCTT – Public Laboratory	1 000 CAD
Partners	380 CAD



4. Financing Program Standards

Component	SME Component SME is a company with less than 250 employees.	Large Company Component (LC)
<u>Minimum</u> number of industrial partners	1 SME minimum less than 250 employees (world total, including related companies) with a place of business and R&D or production activities in Québec. The SME must not be controlled by a large company, national or international (example <50% shareholding). For an SME owned by a company at 50% or more, the total number of employees must be less than 250 to be recognized as an SME. If the SME participates with a LC, the SME must demonstrate significant participation in the project: - Assessment of the company's position, its competition in the market and the ecosystem. - SME scientific and economic contribution level. It is important to clearly demonstrate the SME contributions to the project. (SME role in the project? What % does it contribute? Contribution in cash vs. business income? Does it make an in-kind contribution?) - Benefits of the project for the SME - Benefits for the other companies involved - Benefits for the sector of activity and for Québec. - etc.	1 LC minimum with a presence in Québec (R&D or production)
Eligibility of industrial partners from outside Québec	Yes, as a 2nd company It cannot be related to the first company	
<u>Minimum</u> number of Québec academic partners (university or CCTT or public research centres)	1	
PRIMA Québec financing maximum, in %, of eligible R&D costs	40%	20%
	Max \$1.5M (\$500k/year)	
Minimum industrial financing	Min 20% in cash -If one or several SMEs with LC, the total contribution of Québec SMEs must represent at least 20% of the minimum private contribution required.	Min 40% in cash and in-kind 50% of which may be in kind
	The contribution of a company that has been paid to it as part of a government grant will not be considered as an industrial contribution. Money from another government agency is not accepted. <u>Only new industrial contributions for new projects will be recognized as counterparty</u>, i.e., the MEIE aid will be granted in return for new industrial contributions (not already committed as co-financing in other programs or projects).	
Maximum cumulative public financing	80%	60%



Component	SME Component SME is a company with less than 250 employees.	Large Company Component (LC)						
Complementary funding encouraged	NSERC², NRC-IRAP, MITACS, SDTC, IRSST and other municipal, provincial or federal funding sources. Any additional funding must be added to the PRIMA request (thematic and budget) once the additional funding has been deposited. Contact a PRIMA advisor to confirm acceptability. To use MITACS, NRC-IRAP or SDTC as complementary funding, please contact a PRIMA advisor. Additional funding should be obtained within 9 months after the evaluation date to avoid any questioning of the scientific and economic evaluation. Therefore, it is strongly encouraged to submit the application in the period surrounding the PRIMA submission to quickly obtain the PRIMA funds or to have the necessary time to resubmit if the complementary funding body refuses. Ineligible additional funding: • MEIE grant cannot be combined with financial assistance from another program of the Ministère de l'Économie, de l'Innovation et de l'Énergie including those of the Fonds du développement économique (FDE), nor a contribution already matched by the MEIE • Cannot be funding already committed for research activities distinct from those that are the subject of the application to PRIMA. It is necessary to <u>specify in the request for additional funding that an application to PRIMA has been submitted</u> and the supplementary financing budget must include funding from PRIMA³. <u>Complementary funding already obtained that does not specify PRIMA Québec and the current project cannot be used.</u> <u>If a request for additional funding is made to NSERC with co-applicants outside Québec, it will be necessary to contact an advisor, because the financial arrangement will change. For PRIMA's contribution, only students from Québec institutions are considered in the financial calculation.</u> <u>MITACS grant cannot exceed 50% of the research budget and must be divided into its components.</u> • The provincial part (MEIE) comes under PRIMA funding, • The industrial part under industrial financing, • The federal part under complementary funding The scientific evaluation of PRIMA serves as a scientific evaluation for MITACS internships. It is mandatory to quickly contact your PRIMA and Mitacs advisor to ensure the coordination of the PRIMA form and the Mitacs appendix. Division of a MITACS internship unit (15 000\$) <table border="1"> <thead> <tr> <th>MEIE (PRIMA)</th> <th>Industrial</th> <th>MITACS (federal)</th> </tr> </thead> <tbody> <tr> <td>4 000 \$</td> <td>7 500 \$</td> <td>3 500 \$</td> </tr> </tbody> </table>	MEIE (PRIMA)	Industrial	MITACS (federal)	4 000 \$	7 500 \$	3 500 \$	
MEIE (PRIMA)	Industrial	MITACS (federal)						
4 000 \$	7 500 \$	3 500 \$						
Maximum duration of projects	3 years The project can begin, at the earliest upon confirmation of the complete eligibility of the project following its submission, and at the latest 9 months after the approval of financing by the MEIE.							

² In the Alliance grant, please specify PRIMA as "Other funder (who does not participate in the research)" and specify Michel Lefèvre, michel.lefevre@prima.ca as PRIMA resource person.

³ A copy of the request for additional funding must be sent to PRIMA.



Component	SME Component SME is a company with less than 250 employees.	Large Company Component (LC)
Indirect research costs (only for universities and CCTT)	27% of the MEIE contribution on eligible expenses	
PRIMA Québec management fees	4% of R&D budget Max \$50,000 Split between the MEIE (1.6%) and the industrial (2.4%)	2% of R&D budget Max \$50,000 Split between the MEIE (0.4%) and the industrial (1.6%)

Example of funding

SME Component		
Contributions	\$	%
Industrial Partners (Cash)	20,000	Min. 20
PRIMA Québec	40 000	Max. 40
Additional public funding	40,000	40
TOTAL R&D BUDGET	100 000	100

Large Company Component		
Contributions	\$	%
Industrial Partners	40,000	Min. 40
Cash	(20,000)	50% of which
In-Kind	(20,000)	may be in kind
PRIMA Québec	20 000	Max. 20
Additional public funding	40,000	40
TOTAL R&D BUDGET	100,000	100

Please contact a PRIMA advisor to check your budget and avoid problems when submitting.

Technology Readiness Level (TRL)

To properly assess the project submitted to PRIMA, the applicant must identify the TRL level of the technological solution at the start of the project and that targeted at the end of the latter. The TRL level is no longer used in the fund calculation. Projects can range from TRL 1 to 9. However, the PRIMA program is a grant for the support of Research and Development projects, if we find that the share of R and D is low or that another program would be better suited such as Investissement Québec's Innovation program, the project will be declared ineligible.

Eligible Expenses

Eligible expenses are the direct costs of projects (research mandate) incurred in public research institutions in Québec.

Indirect project costs refer to additional operating expenses arising from research projects, but which cannot be specifically attributed to them. They include costs related to the operation and maintenance of infrastructure, the management and administration of projects, as well as compliance with the various regulations and standards in force.



List of eligible expenses:

1. Wages, salaries and benefits that are not the subject of any other public financial support (students, postdoctoral fellows, assistants and research professionals, technicians, etc.);
Salaries including benefits of professors newly recruited by an academic institution based on recognized expertise can be covered for a maximum period of three years, as long as they are part of a research chair dedicated to answering the needs of an emerging industry in Québec. These chairs also ensure the generation of highly qualified personnel to integrate into the workforce in these key industrial sectors.
It is the actual cost and not selling price that must be indicated.
2. Scholarships;
3. Consumables and supplies specific to the project⁴;
4. Purchase (less \$ 25k per equipment before taxes) or equipment rental (maximum 25% of total eligible expenses);
5. Intellectual property management fees;
6. Fees of professionals and subcontractors. The provision of external services must be justified and represent a small portion of the budget;
7. Travel and subsistence expenses according to the Ministry [guideline](#), these must be reasonable. In the context of projects carried out abroad, travel and living expenses abroad for Québec researchers and students are eligible but may not exceed 15% of the total eligible expenses. Travel and living expenses of foreign researchers are not considered eligible.
8. Monetary compensations for project participation;
9. Dissemination fees;
10. Animal and platform fees;
11. Costs related to subcontracts.

List of ineligible expenses

1. Expenditures made prior to the project start date as specified in the agreement. The start date may be, at the earliest, the date of confirmation of project eligibility;
2. Sums related to the release of university professors to carry out activities within the framework of the projects cannot be included in this item of expenditure;
3. Salaries of university researchers who are currently being paid by their institution or by a government granting agency are not eligible expenses;
4. Administrative costs are not eligible;
5. Equipment maintenance costs;
6. Expenses for filing and maintaining intellectual property;
7. Recurring costs such as annual subscription fees and software upgrade fees;
8. Expenses that have already received financial assistance from the Ministry or any other Québec government program funded by the FECC;

⁴ Consumables cannot be the object of commercial transactions between stakeholders (for example, purchased from one of the industrial partners)



9. Refundable federal and provincial taxes;
10. Land acquisition expenses;
11. Building acquisition, construction or expansion expenses.

In-kind contribution

For collaborative projects with an SME, the partners in-kind contributions are not considered in the calculation of the grant. However, the jury will take it into account to assess the significant participation of the SME in the project.

For LARGE COMPANY projects, in-kind contributions from partners are also accepted if:

- These are expenses subject to an audit by the MEI (their value can be reasonably established and supported by supporting documents);
- They are essential to the realization of the selected project;
- They correspond to costs incurred specifically to carry out the project;
- They represent an item that would otherwise have to be paid for at equal or higher cost;
- Only 50% of the total industrial contribution (cash + in-kind) is considered, there may be more than 50% in the project.

The projects are cost-shared between the manufacturer, the MEIE and additional financing. MEIE's support is targeted for the entire project and not just a portion of the project's research activities. Any cost overrun in the project as initially presented to PRIMA must be borne by the promoter.

Indirect Research Cost (Universities, affiliated hospitals and CCTT)

For all funded projects, PRIMA Québec will grant to the university, affiliated hospitals, colleges and CCTTs, in addition to the research grant, a subsidy for indirect costs of research for a maximum of 27% of the grant awarded by PRIMA Québec on the following items of expenditure: salaries, student grants, small equipment, equipment rental, material, consumables and supplies, as well as travel expenses.

Note: The other financial contributors to the project must pay an indirect research expenses rate on their contribution at least equivalent to that of the MEIE for the project (27%). In other words, all the funders must pay the full costs of the research, notably by paying the indirect research expenses.

Management Costs

PRIMA's management costs are shared between the manufacturers and the MEIE. It is the responsibility of the funding applicant to inform industrial partners of PRIMA Québec's management fees. The combined management fees of the MEIE and the industrialist are a maximum of \$50,000.

For SME component projects (4% of the project)

- Companies involved in the project must contribute to PRIMA Québec's management fees for a total amount of **2.4%** of the amount of the research mandate up to a maximum of \$30,000;
- MEIE management fees are 1.6% up to a maximum of \$20,000 max.

For GE component projects (2% of the project)

- Companies involved in the project must contribute to PRIMA Québec's management fees for a total amount of **1.6%** of the amount of the research mandate up to a maximum of \$40,000;
- MEIE management fees are 0.4% up to a maximum of \$10,000.



Intellectual Property Management

An agreement governing conditions for the management of intellectual property must be concluded among all partners (companies, universities, research centres) before financing is awarded.

Application files will be accepted for evaluation even if an intellectual property agreement is not available at the time the proposal is submitted. Nonetheless, **the application file must present a broad outline of the sharing of intellectual property under consideration.**

Communications

Please note that the information given in the identification sheet section as well as the amount of the grant is public data and can be used by the MEIE and PRIMA Québec for promotional purposes.

If your project is approved for funding, the ministry may reserve the right to a first communication. **Please communicate with PRIMA before any first communication** about the project.

5. Procedure and Timetable

1. Call launch on September 11, 2023.
2. Webinar on October 3rd, 2023, at 11 a.m., link for registration:
https://us06web.zoom.us/webinar/register/WN_86-aIlxQHqtmI-USE57w.
3. Letter of intent is mandatory **by noon on October 30, 2023**. If you are not already in contact with an advisor, an advisor will contact the project promoter to help set up the project and ensure that the project is in the right category. Transmission of documents or discussions with the company could take place as part of this validation.
4. Applicants must submit a COMPLETE APPLICATION before **noon on December 4th, 2023**. It is necessary to include the following items with the completed PRIMA form:
 - The CVs of the main researchers and academic and industrial collaborators (no format is imposed).
 - Signed letters of support from all industrial partners specifying:
 - The amount of money in cash and in-kind allocated to the project R&D and PRIMA Québec management fees.
 - Why is this project necessary for them?
 - What will be the benefits for them?
 - A PDF copy of the additional funding request must be sent to PRIMA Québec once it has been submitted.
 - If applicable, the Mitacs joint application form with the RSRI if the promoter does not use the NSERC/MITACS joint program.
5. Verification of project eligibility.
6. Projects will be evaluated by a scientific and economic evaluation committee selected by FRQ-NT and IRAP-NRC (See point 6 for criteria).
7. Results will be announced at the end of Mars 2023.
8. Obtaining additional funding. **This additional funding should be obtained within 9 months after the evaluation date** to avoid any questioning of the scientific and economic evaluation. Therefore,



it is strongly encouraged to submit the application in the period surrounding the PRIMA submission to quickly obtain the PIRMA funds or to have the necessary time to resubmit if the complementary funding body refuses.

9. Sending the documents to the MEIE to obtain the authorization of financing. Please note that any other documents may be requested by the MEIE to validate the project component, the sources of funding (private or public), the company's ability to participate in the project, especially for startups.
10. **Once authorization has been obtained, the grant agreement between the project promoter and PRIMA Québec must be signed within 9 months.** The project can begin, at the earliest upon confirmation of the complete eligibility of the project following its submission, and at the latest 9 months after the approval of financing by the MEIE.
11. During the project, proof of the industrial partner's contribution as well as technical and financial reports will be required as specified in the grant agreement.
12. At the end of the project, final reports (technical and financial) from the promoter and assessment report completed by the companies present in the project will be requested.

6. Evaluation Criteria

For each of the SME and LARGE COMPANY components, the selection of applications will be made by an independent selection committee selected by the FRQ-NT and the IRAP-NRC according to the following criteria and according to the weighting indicated:

TRL 1-3 Projects:

- A. Scientific component (70% of the overall mark)
 - Scientific quality and feasibility of the project (30%);
 - Training and knowledge transfer (30%);
 - Innovation and impact of the project in the medium term (40%).
- B. Economic relevance component (30% of the overall score)
 - Relevance and adequacy between the project and the industry as well as the quality of the team (50% of the economic component);
 - IP strategy and economic benefits for industry and Québec (50% of the economic component).

TRL 4-9 Projects:

- A. Scientific component (60% of the overall mark)
 - Scientific quality and feasibility of the project (20%);
 - Training and knowledge transfer (40%);
 - Innovation and impact of the project in the medium term (40%).
- B. Economic relevance component (40% of the overall score)
 - Relevance and adequacy between the project and the industry as well as the quality of the team (50% of the economic component);
 - IP strategy and economic benefits for industry and Québec (50% of the economic component).



To be eligible for funding, a project must obtain:

- A score above **70%** on the scientific component,
- A score higher than **50%** on the economic component,
- The overall score must be greater than **70%**.

The selection committee can approve the project, refuse it, or approve it conditionally to changes or clarifications required by the selection committee. A summary of the assessment will be sent to the proponent along with the conditional recommendations if applicable.

Following a positive evaluation, the project will be sent to the board of PRIMA Québec for recommendations for funding to the MEIE. However, the MEIE reserves the right not to award the funding. It could prioritize projects based on the research benefits, the training of skilled workers and the economic benefits. It could request additional documents or information from the promoter or companies participating in the project to finalize its decision.

The approval of the MEIE is also subject to obtaining additional funding and an intellectual property agreement between the participants. To avoid lengthening the time between the submission of the project and the funding agreement, please submit the additional funding request and PRIMA request at the same time.

This program is dependent on funding from the MEIE. No guarantee of obtaining the grant can be provided. The grant criteria and other terms and conditions of this funding program are subject to change without notice.

Please note that the decisions of the Evaluation Committee and PRIMA Québec Board of Directors are **final and without appeal**.

7. Notes on the Project Submission Form

- **Feel free to send the completed application form to an advisor for verification before submission.**
- We encourage you to submit your application for PRIMA and additional funding in the same period to avoid extending the time before funding approval.
- If you are using Mitacs funding, please contact your PRIMA and Mitacs advisor to ensure funding rules are followed and forms completed correctly.
- Please note that the information (name of the promoter, name of the companies, as well as the summary) given in the section I-Identification form as well as the amount of the subsidy are public data and can be used by the MEIE and PRIMA Québec for promotional purposes.
- Make sure you have all the expertise needed to carry out the project.
- In the intellectual property section even if an agreement is not yet signed at the time of filing, please clearly state the outline on which the negotiation is taking place or will take place.
- This program aims, among other things, to train highly qualified personnel and to generate economic benefits for companies and for Québec. Please make sure that your application clearly presents these aspects.
- Along with the form comes an Excel file to help you calculate the correct budget of Section VII.
- In the financial budget industrial contributions are direct contributions to R&D. This excludes amounts such as FIR that universities and CCTT may request and management fees from PRIMA.



- For the justification of the prototype line of the budget, please show that you have the necessary expertise and that the costs are realistic for the realization of the prototype and that if authorizations are necessary, these have been obtained or are in the process of being obtained.

8. Contacts

For further information or assistance in the drafting of the application file, do not hesitate to contact an advisor:

- Michel Lefèvre: 514 284-0211, ext. 227, michel.lefevre@prima.ca
- Sébastien Garbarino: 514 284-0211, ext. 226, sebastien.garbarino@prima.ca
- Stéphane Ruggeri : 514 284-0211, ext. 231, stephane.ruggeri@prima.ca
- Cloé Bouchard-Aubin: 514 284-0211, poste 225, cloe.bouchard-aubin@prima.ca

Applications must be sent as **a single file in PDF format** (Adobe Acrobat) by email to:
laura.salatian@prima.ca, 514 284-0211, ext. 223.



APPENDIX A

Hydro-Québec

Hydro-Québec is considered by default to be a public research center.

However, Hydro-Québec plays an extremely structuring role in the innovation ecosystem in electricity production and distribution, a sector where it is a major client in the context of monopoly. Because of this unique situation, the MEIE authorizes Hydro-Québec to be considered as an industrial partner in research projects in partnership with InnovÉÉ, PRIMA and PROMPT if the following criteria are met.

1. Themes:
 - Field of production, transport and distribution of electricity.
2. Partnership:
 - At least one Québec company other than Hydro-Québec must be involved in the project.
 - The Québec company must derive significant benefits from the partnership, notably an equitable sharing of the IP.
3. Structuring and strategic nature of the projects:
 - To be eligible, projects involving Hydro-Québec must be “structuring” and aim at “solving problems of a strategic nature for Québec”. In this sense, projects where benefits will allow above all the continuous improvement of Hydro-Québec’s operations are not eligible.

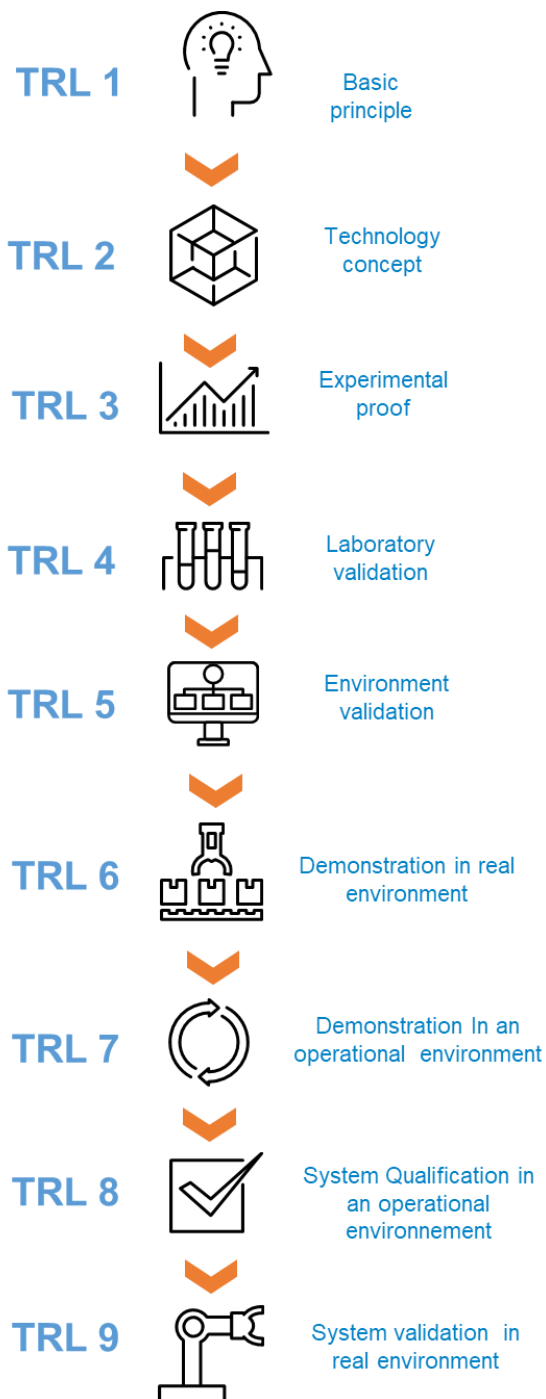
These project eligibility criteria must be analyzed by the evaluation committee and appear in the report submitted to MEIE.

Apart from this exception, all other PSov2b standards must be respected.



APPENDIX B

Definition of different technology readiness levels (TRL)



Graphic inspired by the document: Space Systems - Definition of Technology Readiness Levels (TRL) and their criteria of assessment, ISO 16,290. (<https://www.iso.org/fr/standard/56064.html>)

The ISO16290 standard is available for consultation at the offices of PRIMA Québec.