Call for Research and Innovation Projects in the Field of Advanced Materials – R18

Deadline for submission of applications: May 31, 2019

Objectives

This call for projects seeks to support innovation in the field of advanced materials by funding 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 centres[1]).

With a financial envelope of several million dollars, this call for projects involves two types of funding applications according to the project's technology readiness level (TRL[2]):

- Application for funding a project with a TRL of 1 to 3 at the early stage and involving at least two independent companies, one of which is established in Québec where it carries out its in-house or R&D activities, as well as at least one university or CCTT.
- Application for funding a project with a TRL of 4 to 6 at the early stage and involving at least one company, which is established in Québec where it carries out its in-house production or R&D activities, as well as at least one university, CCTT or public research centre.

Procedure and schedule

Candidates must submit a COMPLETE APPLICATION before midnight, May 31, 2019. Results will be announced no later than the end of September 2019.

Recommended themes

In keeping with its strategic plan, PRIMA Québec recommends the submission of files dealing with the development of advanced materials applied to such key Québec sectors as transportation and infrastructure, energy, the environment, electronics, health and chemistry.

Technologies targeted by this call for projects include primarily:

- **New materials:** Polymers, elastomers, biomaterials, metals, innovative fillers, cellulosic filaments, natural and synthetic fibers, nanomaterials, 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, etc.
- **Implementation processes, scaling and new characterization techniques:** Additive manufacturing and 3D printing, modification and surface treatment, micro/nanofabrication, tools, new characterization tools, modeling and simulation, shaping processes, etc.

[1] The list of recognized eligible public research centres is available at the following link.
[2] Definitions of different technology readiness levels (TRL) are recapped in Appendix A of this document.

Eligible candidates

Applications must be submitted by Québec research establishments (universities, CCTT or public research centres[3]) and must allow the training of highly qualified personnel (HQP). 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 be remain members throughout the duration of the project.

To become a member of PRIMA Québec: http://www.prima.ca/en/become-member.

Financing Program Standards

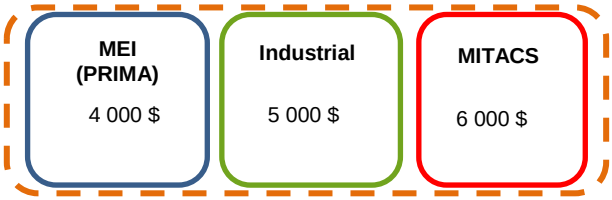
TRL	1 to 3	4 to 6
Minimum number of industrial partners	2 including at least 1 in Québec	1 in Québec
Eligibility of industrial partners from outside Québec	Yes, as a 2nd company An industrial partner may not own more than 50% of another industrial partner in the project.	Yes, as a 2nd company An industrial partner may not own more than 50% of another industrial partner in the project.
Minimum number of Québec academic partners (university or CCTT or public research centres)	1	1
Eligibility of public research centres alone	NO The public research centre must collaborate with a university or CCTT	YES provided the project involves the training of HQP
PRIMA Québec financing maximum, in %, of eligible R&D costs	40%	20%
Minimum industrial financing	20% in cash The cash contribution of any of the partners cannot exceed 80% of the total industrial contribution. The contribution of a company that has been paid to it as part of a government grant will not be considered an industrial contribution. Money from another government agency is not accepted.	40% including maximum 20% in-kind The contribution of a company that has been paid to it as part of a government grant will not be considered an industrial contribution. Money from another government agency is not accepted.
Maximum cumulative public financing	80%	

[3] The list of recognized eligible public research centres is available at the following link.

<table>
<tr><td>Complementary financing encouraged</td><td colspan="2">NSERC (DRC, ARD, Canada Research Chairs, Industrial Research Chairs, etc.), NRC-IRAP, 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. It is necessary to specify in the request for additional funding that an application to PRIMA has been submitted and the supplementary financing budget must include funding from PRIMA.

Only new industrial contributions for new projects will be recognized as consideration. OR MEI aid must be granted in return for new industrial inputs (not already committed as co-financing in other programs or projects).

Supplementary financing:
• Cannot be financial aid from another MEI program, or a contribution already matched by the MEI.
• Cannot be funding already committed for research activities that are distinct from those that are the subject of PRIMA's application.
• Cannot be a contribution provided by the public research centre that is carrying out the project as support for the project.
• Could be an aid from another department or municipality, or public entity.
• For the use of MITACS or NRC-IRAP as complementary funding please contact a PRIMA advisor.
• MITACS funding can not exceed 50% of the research budget and must be divided into its components. The MEI part enters in the PRIMA funding, the industrial part in the industrial funding, the MITACS part in the complementary funding.
• The scientific evaluation of PRIMA serves as a scientific evaluation for MITACS internships

Division of a MITACS internship unit
 
</td></tr>
<tr><td>Maximum duration of projects</td><td>3 years</td><td>3 years</td></tr>
<tr><td>Maximum PRIMA Québec financing in $ per project. including indirect research expenses and management fees of the MEI</td><td>$1.5 M ($500 K/year)</td><td>$1.5 M ($500 K/year)</td></tr>
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Eligible Expenses

Eligible expenses are the direct project costs (research mandate) that are incurred by public research institutions in Quebec. The salaries of university researchers who are currently paid by their institution or by a government granting agency are not eligible expenses.

The projects are cost-shared, and the support of the MEI covers the entire project and not just a portion of the project's research activities.

Indirect research expenses

For all funded projects, PRIMA Québec will grant to the university, in addition to the research grant, a subsidy for indirect research costs 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 MEI 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.

PRIMA Québec management costs

It is the responsibility of the grant applicant to inform the industrial partners of the management fees of PRIMA Québec.

For TRL 1-3 projects

- The industrialists involved in the project must contribute to the management fees of PRIMA Québec for a total amount of **2.4%** of the amount of research mandate.
- The management fees of the MEI are 1.6%

For TRL projects 4-6

- The industrialists involved in the project must contribute to the management fees of PRIMA Québec for a total amount of **1.2%** of the amount of research mandate.
- The management fees of the MEI are 0.3%

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.

Evaluation criteria

For each of the "TRL 1-3" and "TRL 4-6" facets, files will be selected by an independent jury based on the following criteria and in the proportions shown:

TRL 1-3 projects:

A. Scientific part (80% of the global note)

- Project's scientific quality and feasibility (30% of the scientific part)
- Excellence of the research partnership (40% of the scientific part)
- Degree of innovation and training of HQP as well as the project's spinoffs in the midterm (30% of the scientific part)

B. Economic Relevance part (20% of overall score)

- The match between the project and the needs of the industry (40% of the economic part)
- The match between the resources mobilized and the objectives (20% of the economic part)
- Judge benefits for all partners (40% of the economic part).

TRL 4-6 projects:

A. Scientific part (70% of overall score)

- Project's technical quality and feasibility (30% of the scientific part)
- Quality of the plan for the transfer of knowledge, training and industrial applications (30% of the scientific part)
- The project's degree of innovation anticipated competitive advantages as well as its socioeconomic spinoffs (40% of the scientific part)

B. Economic Relevance part (30% of overall score)

- The match between the project and the needs of the industry (40% of the economic part)
- The match between the resources mobilized and the objectives (20% of the economic part)
- Judge benefits for all partners (40% of the economic part).

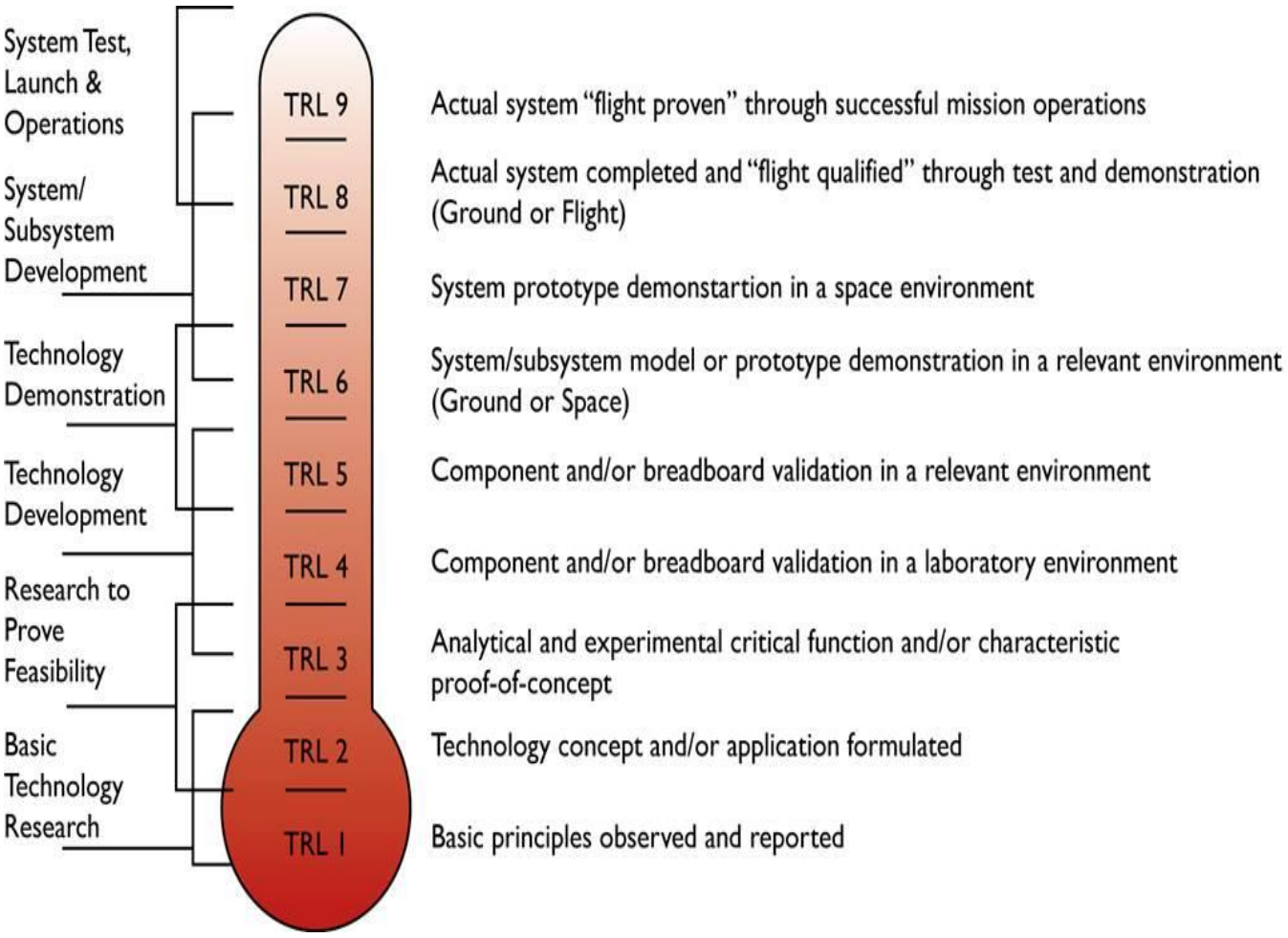
To be eligible for funding, a project must obtain a score greater than 70% on the scientific part and on the overall score.

Contact person

For further information or assistance in the drafting of the application file, do not hesitate to contact Michel Lefèvre, at 514 284-0211, ext. 227. Applications must be sent in one file in PDF format (Adobe Acrobat) by email to: sylvie.dufort@prima.ca.

APPENDIX A

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.

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