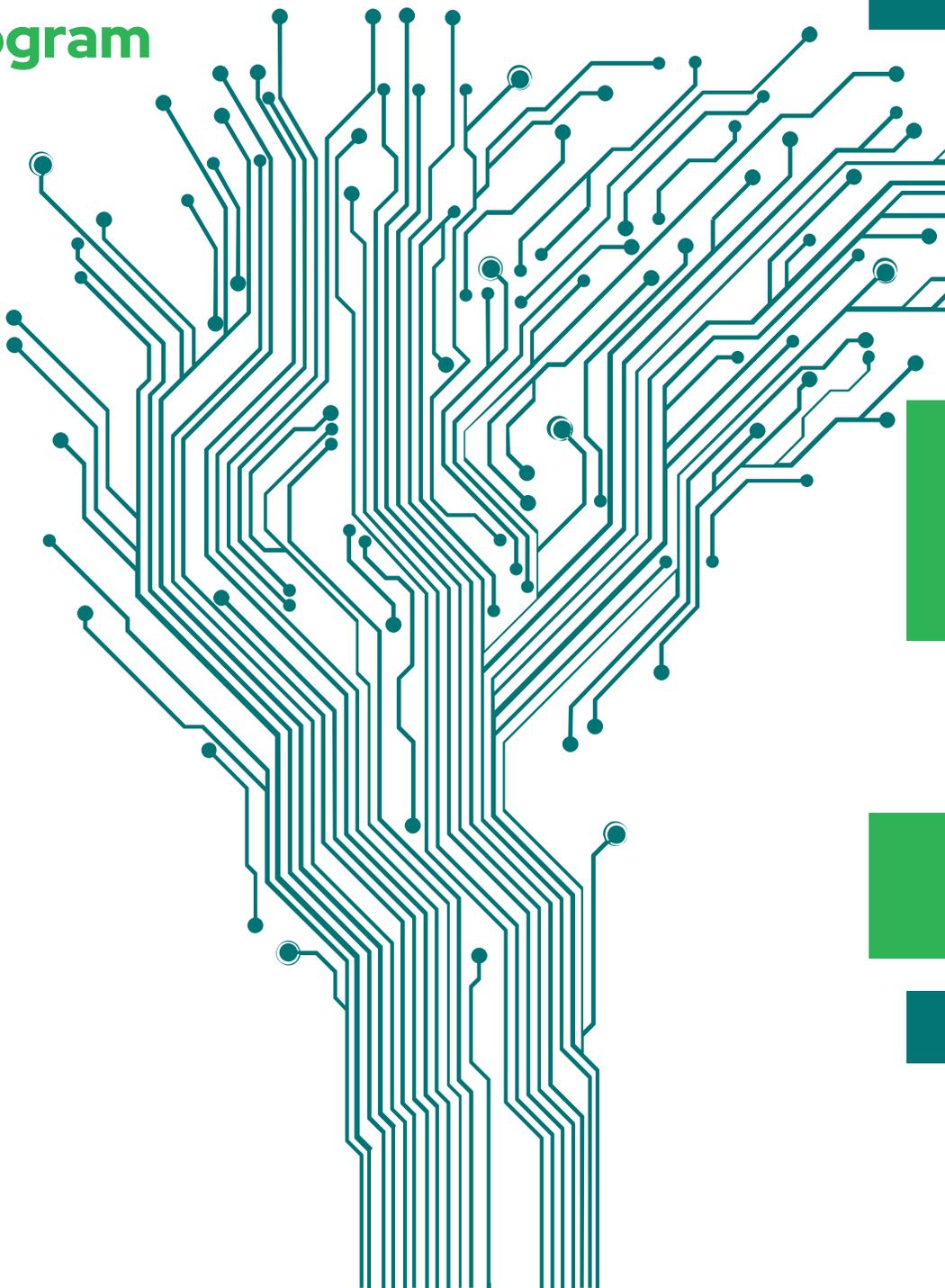




# Program Guide

## Technology Program

Updated August 2023



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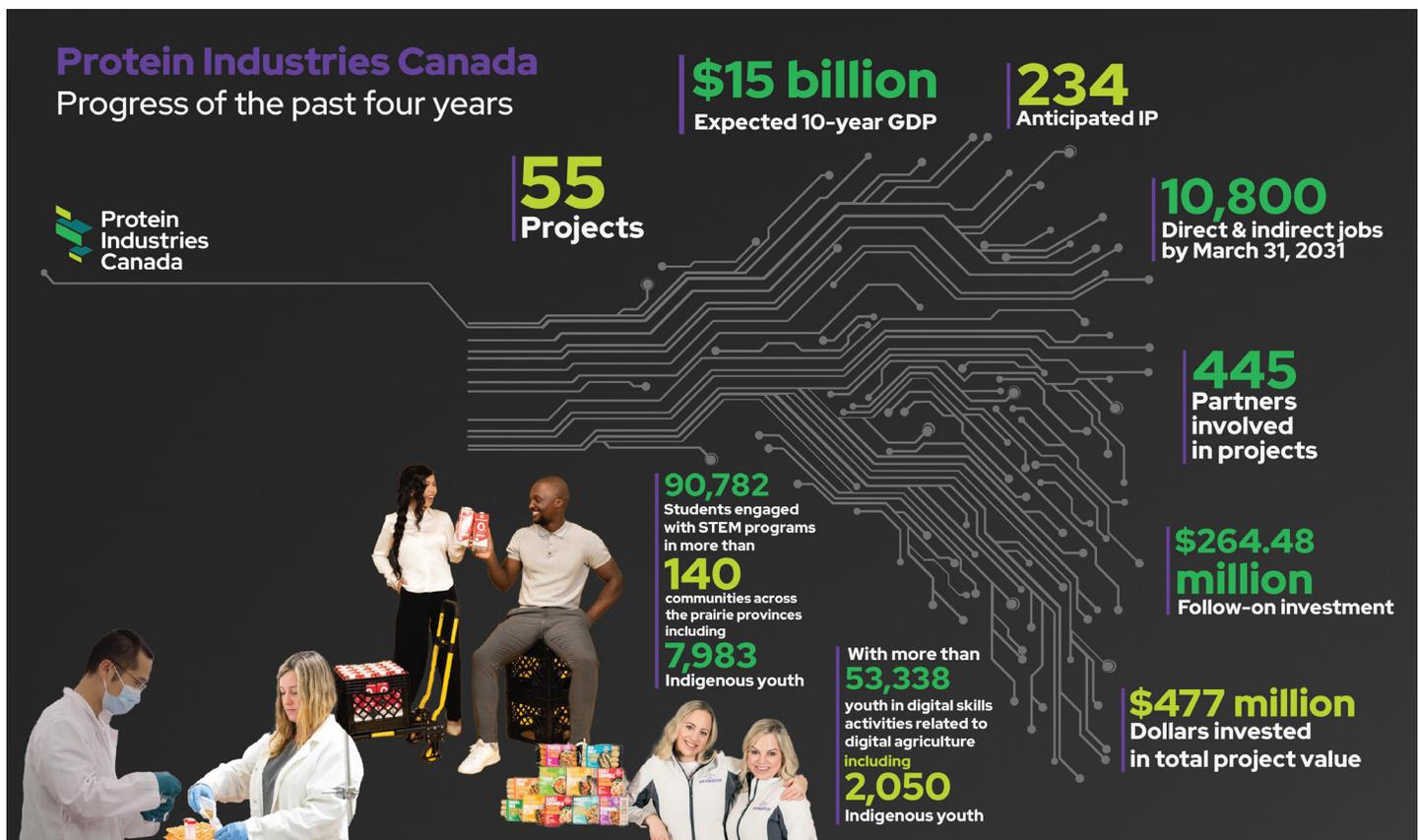
# Introduction to the Technology Program

## About Protein Industries Canada

Protein Industries Canada is an industry-led, not-for-profit, value-chain organization created to position Canada as a global source of high-quality plant protein and plant-based co-products. Our vision is to position Canada as a leading global source of sustainable, high-quality plant protein and plant-based co-products, while substantially contributing to Canada's economic growth and international trade.

Our mission is to inspire innovation and support collaboration to transform Canada's agriculture and food processing sectors. Protein Industries Canada has a track record of working collaboratively with stakeholders to accelerate and commercialize transformative innovations in Canada's plant-based food, feed, and ingredient ecosystem. Since 2019 Protein Industries Canada has:

- Funded 55 projects for a total project value of more than \$477 M.
- Leveraged more than \$300 M in investment through industry partners.
- \$264 M in follow-on investment in member companies.
- 234 new Intellectual Property Assets anticipated
- \$15 B in Canadian GDP impact in 10 years and 10,800 direct and indirect jobs expected, based on 28 analyzed projects.



## About the Global Innovation Clusters

The Innovation Supercluster Initiative (ISI) is an exciting strategy created by the Government of Canada, which aims at driving commercially successful innovation, fostering growth and creating jobs across Canada.

Clustering is the concept of working together – sometimes with unconventional partners, or with a company that is elsewhere on the value chain – to enhance innovation, leading to new discoveries or overcoming challenges. For example, it could be collaborating on research on yellow pea protein content that leads to improved processing efficiency, using data to improve on-farm decision making, to use the starch and other co-products that result from fractionation as food ingredients, or to produce products such as adhesives or food packaging materials. By working together, risk is shared, strengths are leveraged, and innovation is accelerated.

The supercluster initiative is more than just investing money; it is about doing business differently – leveraging strengths to drive innovation, overcome barriers and explore new opportunities

Between now and March 31, 2028, the Government of Canada will invest \$750 million into the Global Innovation Clusters, establishing Canada as a global leader in their five industry sectors.



**COLLABORATION  
ACCELERATES  
INNOVATION**

## The Opportunity

The demand for plant-based food is increasing. Driven by a growing global population and an expanding middle-class, combined with consumers choosing plant-based foods for health, environmental and animal welfare reasons, it is expected that by 2035 the annual global market will be worth upwards of more than \$250 B.

Canada has the potential to be – and is well on our way to becoming – a global leader in plant-based ingredients and finished food products. Building on our strength as an agricultural powerhouse we have opportunity to turn this global demand into a long-term, sustainable economic driver for Canada. In fact, at Protein Industries Canada, we believe that by 2035 Canada will provide 10 per cent of the plant-based ingredients to the world – a goal that, when achieved, will contribute upwards of \$25 billion a year to Canada's economy, supported by 17,000 jobs.

In the first four years of operations, Protein Industries Canada demonstrated our ability to connect the ecosystem and catalyze innovation. With this renewed investment, Protein Industries Canada will build off the foundation of Fund I to achieve even more. We believe that by 2028, Protein Industries Canada will have facilitated the investment of more than \$2 billion into Canada's plant-based food and feed ecosystem and supported the creation of almost 1,500 new products and services, while reducing the GHG emissions associated with agricultural production and food processing.



# Technology Leadership Program Areas of Investment

Protein Industries Canada's investment portfolio will continue to focus on the value chain, with an increased emphasis on ingredient processing and selling at every point in the value chain. Areas of investment are as follows:

**Genetics (15%)** - germplasm development with an aim to improve processing efficiency, quality, sensory qualities and the development of novel ingredients:

- Improved protein content, quality, sensory qualities, functionality and/or nutritional profile;
- Improved co-product quality, functionality and/or nutritional profile;
- Reduced anti-nutritional factors;
- Improved efficiency of protein extraction and/or crop fractionation; and
- Increased availability of supply for emerging field crops.

**Crops (10%)** - technologies to measure and improve on-farm sustainability and information flow along the value chain:

- Systems that support the measurement, verification and reporting of traceability / chain of custody, sustainability and food safety of Canadian crops and ingredients.

**Ingredients (50%)** - the development, scaling and optimization of plant-based ingredients:

- Testing and scaling of new and novel ingredient manufacturing processes;
- Improved rates of protein extraction and nutrient density;
- Reduced water and energy requirements in ingredient manufacturing processes;
- Optimized ingredient manufacturing processes for Canadian crops and Canadian conditions;
- The development of new and novel ingredients and co-products from Canadian crops; and
- Improved processing efficiency in the manufacturing of plant-based ingredients.

**Products (25%)** - the conversion of Canadian-made ingredients and co-products into consumption-ready goods:

- The creation and commercialization of consumer-ready food products that align with consumer needs, expectations and trends, including clean-label, sustainable and nutritious products;
- The creation and commercialization of value-added animal feed products; and
- The creation and commercialization of new industrial bio-products derived from the co-products of protein extraction and ingredient manufacturing.

In addition to the four areas of investment, in Fund II, Protein Industries Canada will entertain proposals from across TRL levels to ensure a pipeline of projects to support innovation for the next decade.

**Proof of Concept (20%)** - Projects that will demonstrate feasibility at pilot scale by generating data to assess technical and economic feasibility. These technologies would be expected to be commercialized within three to five years, and have the potential to transform the sector.

**Technology Scaling (50%)** - Projects that will enable the first commercial deployment of a technology, enabling companies to establish a feedback loop with prospective customers, and to assess technical, economic and commercial feasibility.

**Commercially Ready (30%)** - Projects that will enable companies to optimize and deploy commercially viable technology for Canadian crops and conditions.

# Turning Ideas into Projects

Protein Industries Canada will co-invest in collaborative consortia that leverage strengths, address gaps and incent innovations along the agrifood value chain. All projects are expected to engage diverse and inclusive teams with meaningful participation of women, Indigenous Peoples and/or other under-represented groups.

Protein Industries Canada's contribution, both in magnitude and proportion, to an approved project will be determined by how, and the extent to which, the project outcomes are aligned with the priority areas and Global Innovation Cluster objectives and the potential for transformation.

Protein Industries Canada staff are available to support project consortia throughout the proposal development process.

## Economic Reconciliation

Economic reconciliation is the process of addressing the economic disparities and injustices experienced by Indigenous peoples. In alignment with the Federal Government of Canada, Protein Industries Canada recognizes that Indigenous self-government and laws are critical to Canada's future, and that Indigenous perspectives and rights must be incorporated in all aspects of this relationship. The implementation of the United Nations Declaration on the Rights of Indigenous Peoples requires transformative change in industry's relationship with Indigenous peoples. The UN Declaration is a statement of the collective and individual rights that are necessary for the survival, dignity and well-being of Indigenous peoples around the world, and, within the scope of the organization's mandate, Protein Industries Canada will take an active role in enabling these rights to be exercised. Protein Industries Canada will fulfil its commitment to implementing the UN Declaration through collaborative initiatives and actions. This approach aligns with the UN Declaration itself.

As part of Protein Industries Canada's role in striving for economic reconciliation, we will require all proposals to incorporate an aspect of economic reconciliation into proposal submissions. As there are many differences between proposals and organizations, the approach to economic reconciliation will also differ between proposals and organizations. We will work cooperatively with federal, provincial, local, and other Indigenous governments to achieve meaningful outcomes from these undertakings. We recognize that differences may from time to time arise and will support and adhere to conflict resolution processes that Indigenous parties may establish for the purposes of resolving differences in good faith

Some potential approaches can include, but are not limited to:

- Engaging with Indigenous communities and organizations to understand their priorities and needs related to economic reconciliation. This may involve consulting with Indigenous leaders, business owners and other stakeholders to gather input and ideas;
- Identifying specific areas where economic reconciliation can be addressed in the proposal. This may include investments in Indigenous-led businesses, support for Indigenous entrepreneurship or efforts to address the ongoing impacts of colonization on Indigenous economic development;



- Developing strategies and action plans to address the identified priorities and needs. This may involve creating partnerships with Indigenous organizations, identifying funding sources, and developing measurable goals and targets for success;
- Completing organizational training on Indigenous engagement and reconciliation;
- Implementing the strategies and action plans, with ongoing consultation and collaboration with Indigenous communities to ensure that the efforts are effective and aligned with their priorities; and/or
- Monitoring and evaluating the progress of the economic reconciliation efforts and adjusting as needed to ensure that they are successful and sustainable over the long term.



## Eligibility

For a project to be considered eligible for investment, it must:

1. Be submitted by a consortium of at minimum three (3) Protein Industries Canada members, at least one of which is a Small or Medium Enterprise (SME) as defined by Statistics Canada as a business with 499 or fewer employees.
2. A consortium may include academic or research institution(s). This is not mandatory but is encouraged.
3. Each member of the consortium must contribute to the project in a meaningful way. This is generally through a financial commitment and activities in the workplan, but could also be providing IP or market expertise etc.
4. At least two members of the consortium must contribute financially to the project. Protein Industries Canada will reimburse **up to 45 per cent** of eligible costs of approved projects.
  - It will be up to the consortium members to determine the amount and nature of their respective contributions. The contribution of each consortium member does not need to be equal.
5. At least two partners must be Canadian companies or multi-national corporations who are legally entitled to do business in Canada with a significant Canadian business operation. Non-Canadian entities can participate in a consortium, based on approval by Protein Industries Canada.
6. The project must be aligned with the objectives of Protein Industries Canada and the Global Innovation Cluster initiative.
7. All Projects are required to pay a four per cent (4%) project administration fee to Protein Industries Canada. This fee will be calculated at four per cent (4%) of the total eligible reconciled project costs to a maximum of two times Protein Industries Canada contribution.
8. The initiative must be incremental to the regular business of the participating organizations, meaning that the project:
  - Is not approved nor in progress and that financial commitments to it are distinct from investments that would have otherwise occurred;
  - Would not be possible without the participation of consortium partners;
  - Is new or would not be undertaken at the same scope or scale without the co-investment provided by the Cluster.
9. At least one consortium member should represent a target customer or user of the new technology solution.
10. All projects must have experienced and proven project management capabilities for complex, multi-party collaborative initiatives.
11. All Ultimate Recipients must be compliant with all economic or financial sanctions or trade embargoes imposed, administered or enforced from time to time by the Government of Canada.
12. The project cannot be a "designated project" or a "project" under the applicable federal environmental and impact assessment legislation.

Points to consider when you are building an eligible project under this program:

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### Problem Scoping/Business Goal determination

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How does the scope align with the program's priority areas and Global Innovation Cluster themes? How is this work incremental to your existing business? Do you have an understanding of market size and the competitive landscape? Does the consortium have the skills necessary to support development and commercialization?

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### Consortium Building

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Who is in the consortium (eg. agrifood industry partners, plant protein ecosystem members, technology providers) and what are each of their roles? How do the consortium members benefit? Is the end user of the technology or product represented in the consortium?

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### Projects, AI and Data Assessments

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Are you able to provide quantitative and qualitative information on:

- Data & data governance strategy
  - Project impact assessments
  - Environmental impact assessments
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### Intellectual Property

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How strong is the consortium members' IP position and what is the strategy to maintain a competitive advantage? A detailed IP Rationale must be included in every application.

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### Data & Data Governance Strategy

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A data and data governance strategy will be required for all project applications. As general guidance when formulating a data governance strategy, consider these broad categories:

1. What are the foundational elements of your Data and Data Governance Strategy?
  2. How are you collecting, organizing and grading data?
  3. How are you enabling data access, and sharing and managing data retention?
  4. What are your plans for data analytics, any software or AI solutions and commercialization of any software or data products or services created in the project?
  5. What organizational changes are needed to support your Data and Data Governance strategy? Who will be responsible for any compliance matters related to data collected in the project?
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### Commercialization and Scaling Plan

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What are the economic benefits to Canadians? Does your business plan support market entry and commercialization? What is the value proposition that will drive commercialization? Does your project contribute to supply chain resiliency and/or global integration of Canadian products?

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### Financial Strength

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What funding commitments have been secured to date and what is the level of interest from other funders? Do you have sufficient capital to support commercialization or what is your plan to access capital?

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### Social and Environmental Benefits

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Does your project have a quantifiable environmental benefit such as reduction in GHG emissions or contribution to a circular economy? Is there participation from or do benefits accrue to underrepresented and marginalized groups such as visible minorities, youth, women and Indigenous peoples?

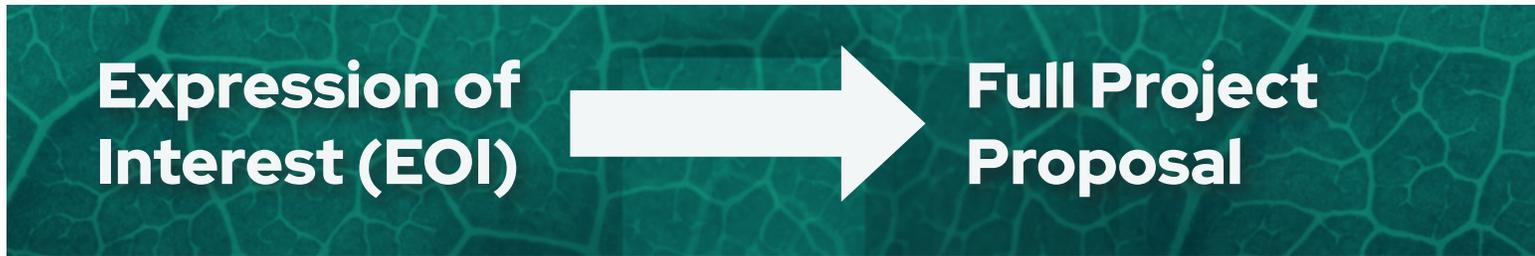
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# Project Budget

There is no set maximum that a project can receive, although Protein Industries Canada will only reimburse up to 45 per cent of reconciled eligible costs. Projects can be submitted as multi-year projects, with the expected annual expenses broken down by year in the proposed budget.

# The Application Process

The application process is made up of two parts:



Protein Industries Canada has staff to help guide you throughout the Project Application Process. This includes helping you understand if your project is eligible, identifying other potential partners you may want to work with, supporting development of the EOI, working through IP, data and commercialization strategies, and more. Our job is to help projects be successful.

## Step 1: The Expression of Interest (EOI)

Once you have reviewed the Project Eligibility Requirements, email [projects@proteinsupercluster.ca](mailto:projects@proteinsupercluster.ca) to set up an introductory call. Following that, you can complete the Expression of Interest (EOI). Each project should only have one application and consortia members must work together.

Each consortium member will also need to fill out and sign a “Declaration As To Authorization and Compliance”. This document outlines each partner’s compliance with the Government of Canada’s sanctions and applicable Acts, and must be complete before moving forward to the second step in our application process.

Once you’ve completed your EOI and Declaration forms, please submit them by emailing [projects@proteinsupercluster.ca](mailto:projects@proteinsupercluster.ca).

## Step 2: The Project Proposal

Evaluation of EOIs may result in one of three outcomes:

1. an invitation may be sent for the consortium to proceed to a Full Project Proposal;
2. the EOI may be tabled for additional information; or
3. the EOI may be declined.

Protein Industries Canada may require consortia to complete a Data and AI Readiness Assessment for their proposed project. Completion of this program will be cost shared with Protein Industries Canada following the Technology Leadership Program reimbursement model.

Once an EOI has been approved, it moves to a full Project Proposal. Successful applicants will be notified by email and will be invited to attend a kick-off meeting held via conference call. Project Proposal development will be collaborative between Consortia Members and Protein Industries Canada staff, and Protein Industries Canada will monitor progress regularly.

Projects will be evaluated as they are submitted.

Proposals will be prepared using the provided Word and Excel templates. The Word template will not exceed 40 pages. Both parts of the application and an initial financial assessment must be completed for a project to be evaluated. The proposal will provide information in greater detail than the EOI.

**Our vision is to position Canada as a leading global source of sustainable, high-quality plant protein and plant-based co-products, while substantially contributing to Canada's economic growth and international trade.**

# Intellectual Property (IP) and Data Governance

Protein Industries Canada has always worked from the principle that IP is a strategic asset that enables organizations to meet their business objectives. Strategic protection of IP enables organizations to secure competitive advantages, and Protein Industries Canada works to ensure that foreground IP created with Cluster funding benefits Canada's agrifood industry and Canada as a whole.

Technology program projects are required to document an IP rationale as part of their project proposal. The IP rationale template will be provided to consortium members as part of the project proposal document and will be excised from the proposal and submitted to Innovation, Science and Economic Development Canada (ISED) to meet Protein Industries Canada's IP reporting requirements.

Protein Industries Canada will require all project participants to report on the IP assets generated by their project, which may include patents, trade secrets, trademarks, copyright, industrial designs, plant breeders rights, data sets and other types of intangible assets. As part of its IP reporting requirements, Protein Industries Canada will provide aggregated non-commercially sensitive information biannually to ISED. Non-commercially sensitive aspects of foreground IP generated in the project will be described in Protein Industries Canada's IP Hub. The IP Hub is a member-accessible registry of technology being commercialized for the benefit of Canadians and can also be used by members to showcase non-project IP available for license or further collaborative development. Protein Industries Canada will provide consortium members with IP training that addresses best practices for navigating challenges and opportunities associated with IP.

Project consortia will also be required to develop a data governance strategy for their project. Protein Industries Canada will work collaboratively with all consortium members to identify data sets required for execution of the project, and to define the rules of engagement for how project-related data will be sourced, processed, stored, shared and governed by the consortium.

# Scoring of Project Proposals

Review of Project Proposals submitted to Protein Industries Canada will be initiated within six weeks of receipt. Protein Industries Canada will work to review the projects as quickly as possible within the evaluation process, taking the time necessary to complete our due diligence. All projects are evaluated by the Project Selection Committee. Input from additional technical experts appropriate to the project may also be considered. Projects will be evaluated against criteria that align under three main areas: Ecosystem Development, Technical Merit and Commercial Application.

## Project Approval

Once your project is approved, Protein Industries Canada will work with the members of the consortia to sign a Master Project Agreement (MPA). The MPA is the legal framework for the execution of the project amongst the consortium and will include detailed statements of work, budgets, project plans, IP, data and key milestones.

Prior to signing the MPA, Protein Industries Canada will ask every member of the consortium to complete a detailed financial assessment, including submitting the last two years of accountant-prepared financial statements and their current organizational structure. Additional information may also be requested to substantiate the Project Proposal. Eligible cost reimbursement can begin once the MPA is signed.



# Innovate UK Collaboration Addendum

The following document provides summaries where the Technology Program requirements are amended for the purpose of a joint call for Technology projects in collaboration with Innovate UK. Page references relate to the Technology Program Guide posted as of July 5, 2023.

Technology Program Guide Reference	Amendment for Joint Call with Innovate UK
Page 9: Eligible projects must be submitted by a consortium of at minimum three Protein Industries Canada members, at least one of which is an SME	Innovate UK partners will require a Protein Industries Canada membership. Consortia will require minimum three members, with a minimum of one Canadian SME.
Page 9: At least two members of the consortium must contribute financially to the project. Protein Industries Canada will reimburse up to 45 per cent of eligible costs of approved projects.	Projects will require financial contributions from (minimum) one Canadian company and one UK company. Protein Industries Canada will reimburse up to 45 per cent of eligible costs of approved projects for Canadian consortium members.
Page 9: At least two partners must be Canadian companies or multi-national corporations who are legally entitled to do business in Canada with a significant Canadian business operation.	At least one partner must be a Canadian SME.
Page 9: All Projects are required to pay a four per cent (4%) project administration fee to Protein Industries Canada. This fee will be calculated at four per cent (4%) of the total eligible reconciled project costs to a maximum of two times Protein Industries Canada contribution.	Protein Industries Canada project administration fees will apply only to companies reimbursed by Protein Industries Canada. The fee structure remains unchanged.
Page 9: All Ultimate Recipients must be compliant with all economic or financial sanctions or trade embargoes imposed, administered or enforced from time to time by the Government of Canada. The project cannot be a “designated project” or a “project” under the applicable federal environmental and impact assessment legislation.	Requirements from the Protein Industries Canada Master Project Agreement (including but not limited to declarations and IP requirements) will extend to the funding agreement between Innovate UK and UK based participants. Reciprocal aspects of the Innovate UK agreement may be extended to the PIC MPA.
Page 11: Projects can be submitted as multi-year projects, with the expected annual expenses broken down by year in the proposed budget.	Joint Protein Industries Canada/Innovate UK Projects must be completed by March 31, 2026.
Page 11: The Application Process	Protein Industries Canada will require submission of an Expression of Interest and Project Proposal for evaluation. Additional documents may be required by Innovate UK. Timelines for review may be extended to allow for evaluations and due diligence by each funding partner.



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