

Program Guidelines for Alberta Bio Future

Strategic Priority Area: Lignin Challenge 1.0 Sub-Program

February 2, 2018

1.0 Purpose and Objectives

1.1 Purpose

In partnership with West Fraser Timber Co. Ltd., Alberta Innovates, Bio Sector (AI) continues to build upon the successful completion of previous bioindustrial programs with **Lignin Challenge 1.0**, a new sub-program under the **Alberta Bio Future (ABF)** umbrella program.

The Lignin Challenge is intended to serve as a pipeline for the development of applications for lignin and opportunities for deployment. This program supports early-stage work to demonstrate technical feasibility of lignin in high-value applications with potential for commercialization.

In line with Government of Alberta and Alberta Innovates' priorities, Lignin Challenge 1.0 aims to increase the knowledge, capacity and value of lignin through research, application development and innovation.

Investments in lignin technology and application development have grown out of past initiatives including:

- Commissioning of the lignin extraction, demonstration-scale facility at the West Fraser pulp mill in Hinton, Alta.
- Internal lignin challenge at the former Alberta Innovates Technology Futures. [Recommendations to Build Alberta's Bioeconomy \(BioE Initiative\)](#) (2013).
- [Alberta Forest Products Roadmap](#) (2011).
- [Getting Value from Every Fibre \(Fibre Roadmap\)](#) (2007).
- The current [Alberta Bio Future](#) program, administered by AI.

Lignin is an amorphous polymer related to cellulose that provides rigidity. Together with cellulose, lignin forms the woody cell walls of plants and the cementing material between them. The lignin is removed during the pulping process to produce high-quality bleached pulp.

Lignin Challenge 1.0 will support up to 18 projects, providing each successful applicant with:

- Up to \$25,000 in funding for their lignin project research.
- Requested quantities (based on a clear explanation) of required lignin A or B from the West Fraser pilot plant.
 - Lignin A – Light brown in colour and generally hydrophobic, this lignin has an inorganic content <1%, pH 3.3 and dry solids of around 50%.
 - Lignin B – pH 10.4 and solids at <20% ash. The material tends to be hydrophillic in nature and hence water soluble. This material is around 60% dry solids. Solubility increases when diluted caustic soda is added.

- Access to InnoTech Alberta’s researchers, capacity and facilities to assist in the successful delivery of their project.

Successful projects may have the opportunity for ongoing, future support toward commercialization.

1.2 Objectives

- To demonstrate technical feasibility of lignin in high-value applications with commercialization potential.
- To advance the state of the art for the application of lignin.

1.3 Guiding Principles

- **Value:** Projects must bring demonstrated value to Alberta and Albertans.
- **Rigour and Excellence:** Projects will be subject to rigorous evaluation.
- **Due Diligence:** Alberta Innovates will only invest in high-quality projects supported by a good business case.
- **Leveraging, Collaborations and Partnerships:** Applicants are encouraged to identify opportunities to maximize project financing, resources and use of highly qualified personnel and infrastructure, through leveraging, partnerships and collaborations amongst government, academic and/or private-sector organizations.
- **Multi-Sector Participation:** Alberta Innovates encourages cross-sector participation in the development of innovations. For example, projects involving agriculture, forestry, the oil and gas sectors, as well as downstream users of products, are encouraged.
- **Alignment:** Projects must be aligned with Government of Alberta priorities and the Alberta Innovates Business Plan (<http://albertainnovates.ca/publications/>).

1.4 Eligibility

Projects must:

- Be completed within **one year**.
- Be submitted by researchers at Canadian institutions, companies or other organizations.
- Focus on lignin application developments leading to potential commercialization opportunities in Alberta.
- Engage a project team with demonstrated competence, experience and the organizational capacity to successfully complete the project.

2.0 Guidelines for Project Submission

2.1 Process and Deadlines

Proposals are invited from eligible applicants wishing to participate in **Lignin Challenge 1.0**. Each proposal must be submitted through a single-stage process in the form of a Letter of Intent (LOI) through the online application system (<https://www.fundingconsortium.gov.ab.ca/aibio/Account>).

Proposals will be reviewed and assessed by the Alberta Innovates Selection Committee for alignment with sub-program purpose and objectives and the evaluation criteria identified in Section 4.0. The committee may include external reviewers.

Timelines	Date and time
Lignin Challenge 1.0 opens to submission of LOIs.	February 2, 2018
Deadline for submission of proposals.	March 15, 2018, 4 p.m. MST
Proposal review.	March 19 – April 19, 2018
Communication to applicants about successful and unsuccessful proposals.	April 23, 2018
Agreements developed with successful applicants.	After May 1, 2018

2.2 Submission of Proposal

Application: The proposal form can be found in the AI [online application system](#), under **Alberta Bio Future Lignin Challenge 1.0**.

3.0 Project Information

3.1 Eligible Expenses

Eligible expenses are those costs associated with the development of new and innovative, proof-of-concept projects involving lignin.

Category	Eligible Expenses
Personnel – Project Team	<ul style="list-style-type: none"> Time for specific activities on the project, prorated at usual annual salary rates. Time for specific activities for project team members may be acceptable as in-kind contribution.
Travel	<ul style="list-style-type: none"> Travel to give presentations to, or discuss project with stakeholders.
Equipment	<ul style="list-style-type: none"> Equipment directly required for the project, as specified in the program description documents and approved by AI.
Supplies	<ul style="list-style-type: none"> Cost of supplies directly required for the project.

Supplemental costs	<ul style="list-style-type: none"> Supplemental costs required to deliver the project are eligible. Overhead costs are not eligible.
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3.2 Funding Sources

Applicants are encouraged to leverage additional funding for their project. Public and private sources may contribute to the project costs in cash or auditable in-kind services or goods.

3.3 Progress Reports and Financial Reporting

Successful project proponents will be required to submit a final progress report and final financial report **within three months** of project completion.

3.4 Intellectual Property Principles

Intellectual property owned by the applicant must be managed by the applicant or the applicant’s organization. Applicants must ensure that they have sufficient right to intellectual property to be able to implement the project. Ownership of intellectual property arising from projects will be vested with the project applicant.

3.5 Confidentiality

Alberta Innovates is committed to protecting the confidentiality of application details. External experts who act as reviewers must sign a confidentiality agreement.

As a provincial corporation, Alberta Innovates is subject to the protection and disclosure provisions of the Freedom of Information and Protection of Privacy (FOIP) Act. Personal information is collected pursuant to Section 33(c) of the Freedom of Information and Protection of Privacy Act as it relates to and is necessary for the sub-program. Should you have any questions about the collection of this information, you may contact Ms. Joan Unger, AI, Director of Operations, at 780-450-5081.

4.0 Evaluation Criteria

Each letter of intent will be evaluated using the following mandatory administrative criteria. If it does not meet all the following criteria, no further evaluation will be conducted.

Mandatory Administrative Criteria	Yes	No
LOI is received on time.		
LOI is complete as per the online template.		
LOI is submitted by an eligible applicant.		
Project fits within sub-program objectives as outlined in these guidelines.		
Project utilizes LIGNIN as outlined in these guidelines.		

Proposals meeting all the mandatory criteria will then be evaluated in the following categories:

No.	Desired Criteria	
1	Project Overview	
2	Objectives, Milestone and Deliverables	
3	Benefits	
4	Budget	
5	Project Team	
	Total Score (Maximum 100)	

To inquire about the Alberta Bio Future, **Lignin Challenge 1.0** sub-program, please contact:

Mr. Steve Price, steve.price@albertainnovates.ca, 780-450-5570

Dr. Christine Murray, christine.murray@albertainnovates.ca 403-382-7188

Mr. Gordon Giles, gordon.giles@albertainnovates.ca 780-450-5411