

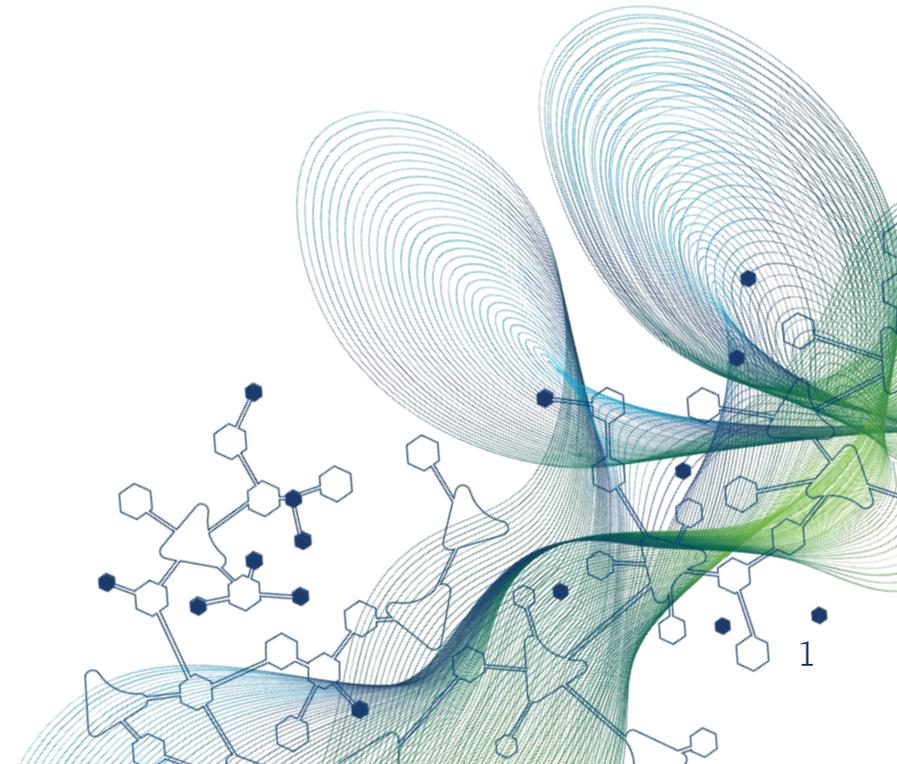
Hydrogen Centre of Excellence

Competition #1 – Advancing Hydrogen

Applicant Orientation

Bryan Helfenbaum, Executive Director, Advanced Hydrocarbons
David Van Den Assem, Director, Clean Technology

July 28, 2022



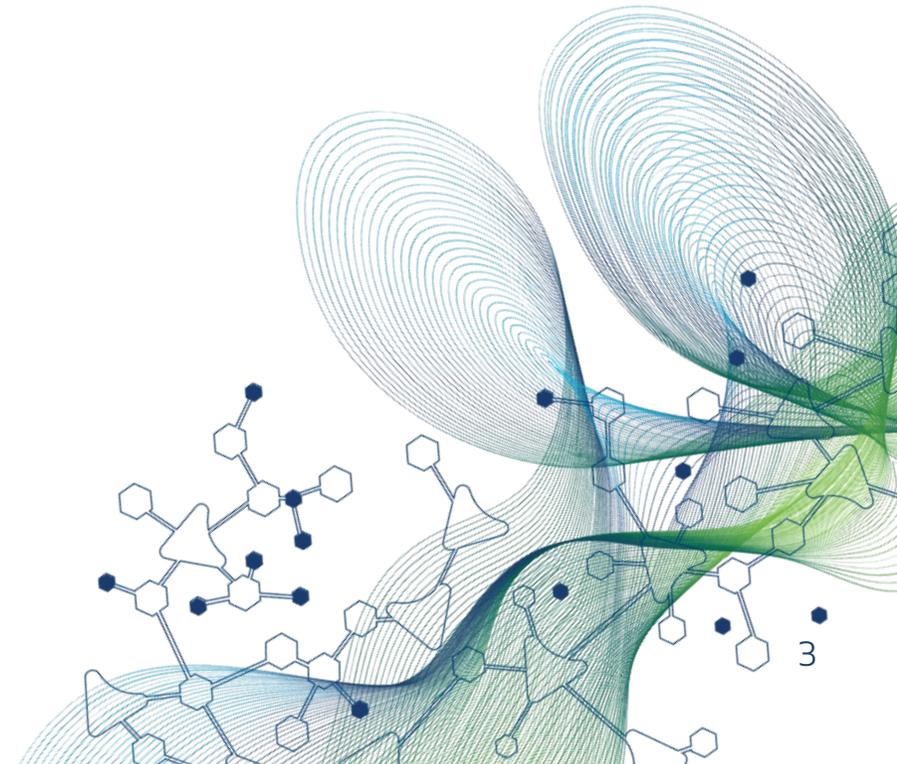
Agenda

1. Introductions
2. Housekeeping
3. Alberta Innovates Background
4. Hydrogen Centre of Excellence Proposals
5. Project Targets and Considerations
6. Reviewer Q&A



Land Acknowledgement

We acknowledge the many First Nations, Métis and Inuit who have lived in and cared for these lands for generations. We are grateful for the traditional Knowledge Keepers and Elders who are still with us today and those who have gone before us. Alberta Innovates respectfully acknowledges that we are situated on traditional territory of the Treaty 6, Treaty 7, and Treaty 8 First Nations; home to Métis Settlements, the Métis Nation of Alberta, and Regions 2, 3 and 4 within the historical Northwest Métis Homeland. We respect the histories, languages, and cultures of First Nations, Métis, and Inuit whose presence continues to enrich our vibrant community.



Equity – Diversity – Inclusivity

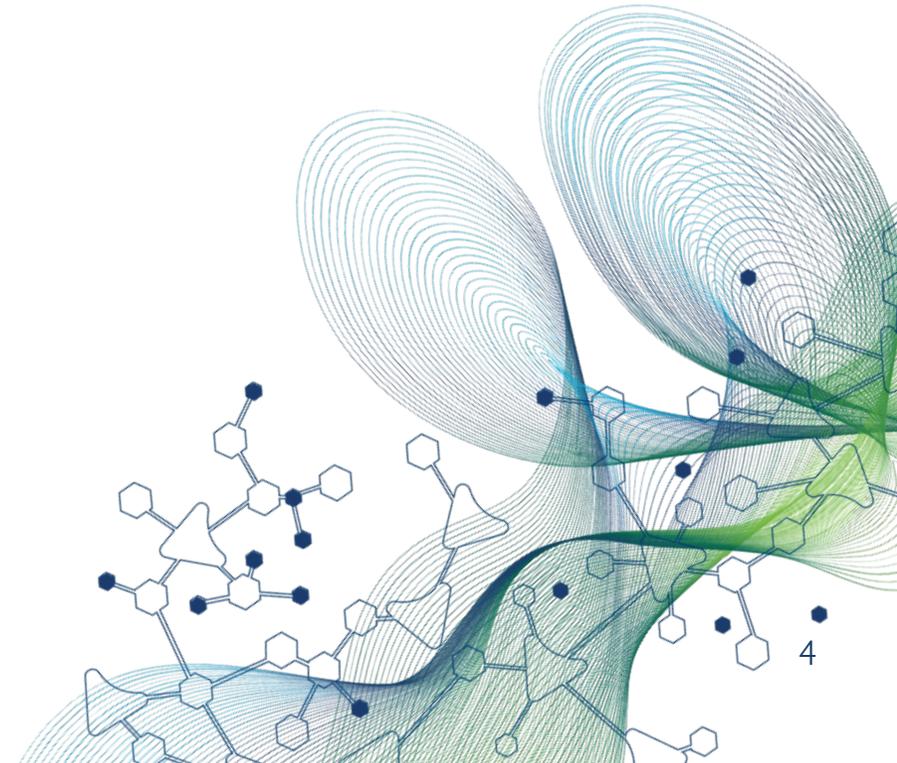
We believe the Alberta Research and Innovation (R&I) ecosystem is stronger and more sustainable when it is broadly representative of the overall diversity of our community.

We strive to ensure that all interested and qualified parties have an equitable opportunity to participate and contribute to the ecosystem and that our processes are inclusive.

Historically, there have been several groups/populations that have been under-represented in the R&I landscape including:

- Women entrepreneurs/researchers
- Indigenous entrepreneurs/researchers
- Remote/small community entrepreneurs/researchers
- New immigrant entrepreneurs/researchers

We encourage ALL entrepreneurs/researchers to apply!



Alberta Innovates at a Glance

2

Subsidiaries
G-FER Technologies
Innotech Alberta



Investment
of \$189 million
for 2020-21



558
Employees
Alberta Innovates 219
G-FER 99
InnoTech Alberta 240

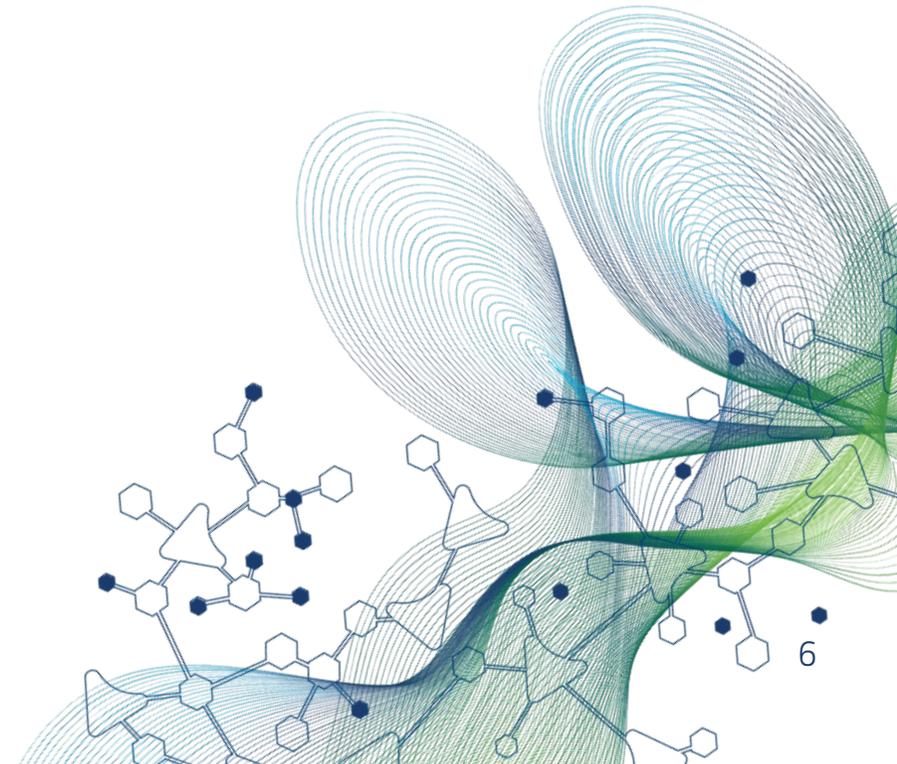


11
Locations

“Alberta’s research and innovation engine, solving problems, creating possibilities”

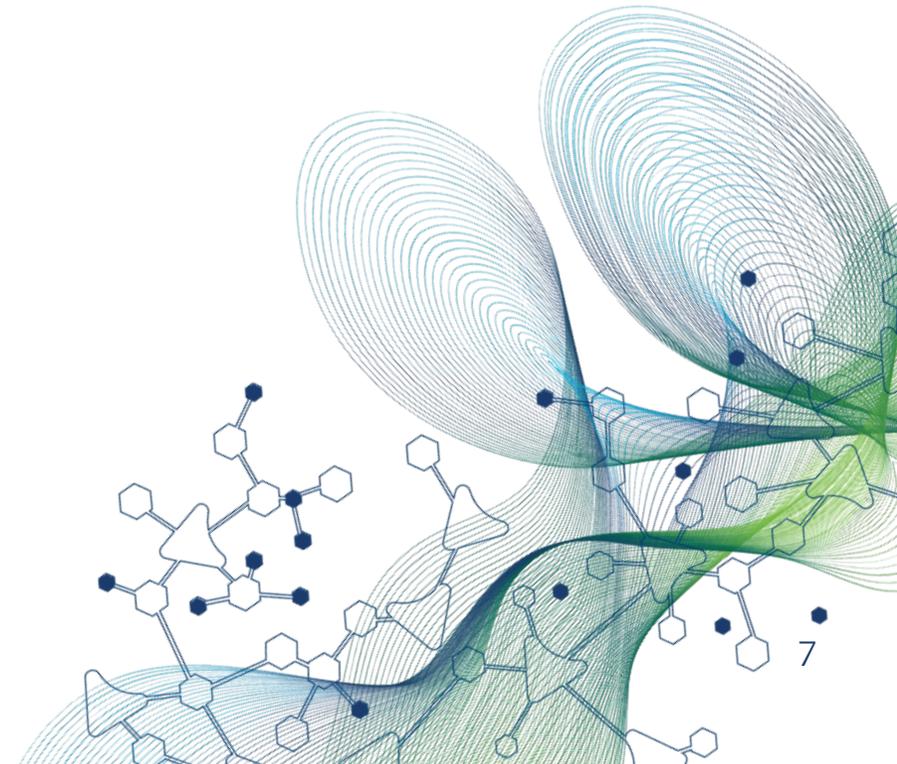
HCOE Governance Committees

- Alberta Innovates
- Emissions Reduction Alberta
- Ministry of Advanced Education
- Ministry of Energy
- Ministry of Environment & Parks
- Ministry of Jobs, Economy and Innovation
- Ministry of Municipal Affairs
- Ministry of Transportation



HCOE Advisory Panel

- Alberta's Industrial Heartland Association
- BC Centre for Innovation & Clean Energy
- Canadian Hydrogen Fuel Cell Association
- Edmonton Global
- Natural Resources Canada
- Prairies Economic Development Canada
- Transition Accelerator
- University of Alberta
- and others



Hydrogen Centre of Excellence Focus Areas

ALBERTA'S HYDROGEN AMBITION

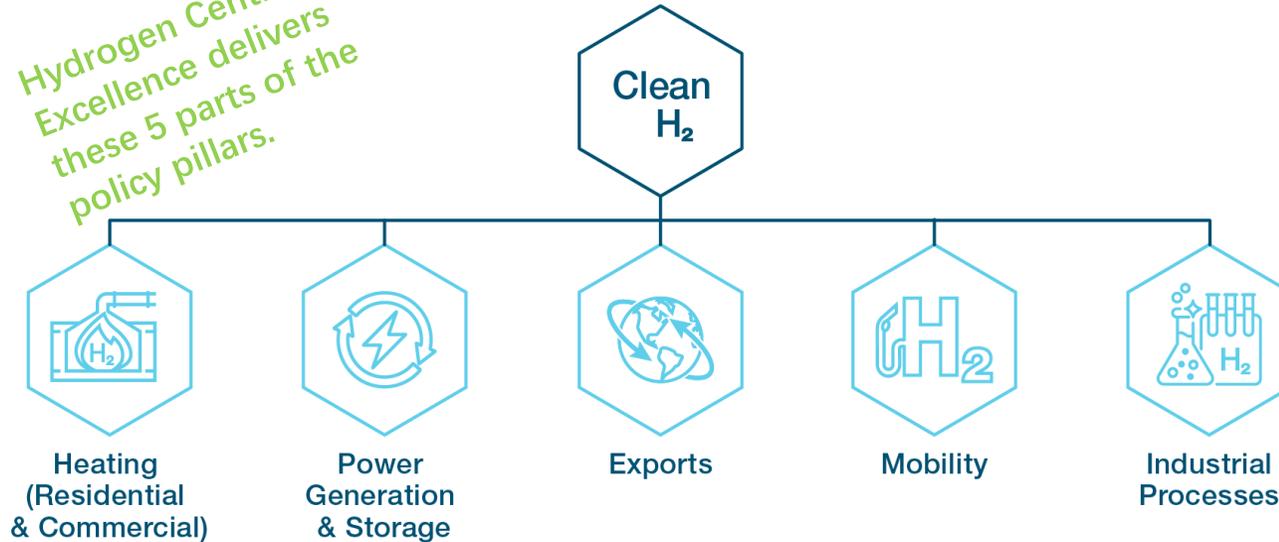
By 2030, clean hydrogen is integrated at scale into Alberta's domestic energy system for use in mobility, heat, power generation and renewable energy storage, and industrial applications. Alberta has established itself as the global supplier-of-choice in clean hydrogen exports.

Policy Pillars

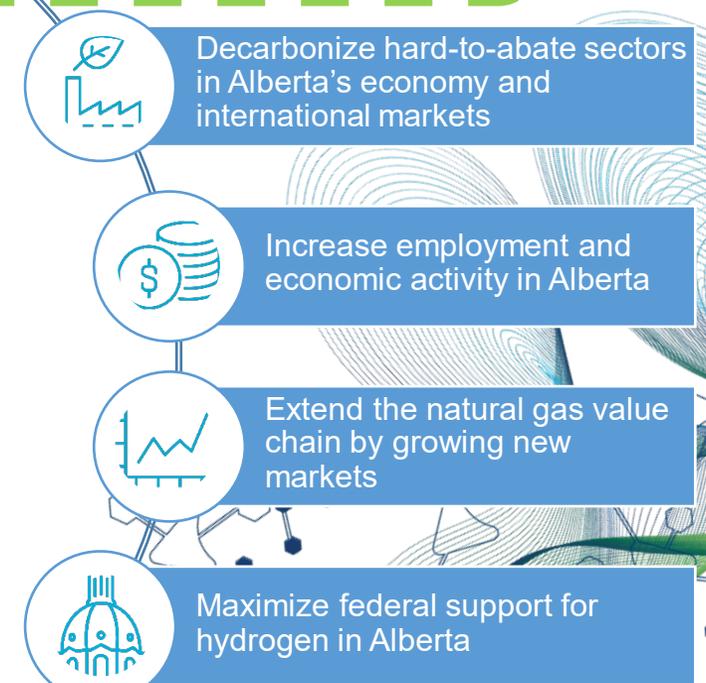


Hydrogen Centre of Excellence delivers these 5 parts of the policy pillars.

Markets



Outcomes



Hydrogen Centre of Excellence

Program Objectives

- Develop and deploy hydrogen-focused technologies
- Strengthen Alberta's environmental, social and corporate governance credentials and spur economic growth
- Build a sustainable and self-sufficient clean hydrogen economy in Alberta
- Increase Alberta's technology strength in clean hydrogen technology deployment



HCOE Focus Areas and Scope

Ecosystem

- Opportunity Analysis



- Public Awareness



- Partnership Building



Technology

- Production



- Transportation/
Distribution



- Carrier/Storage



- End Use/Markets



Service

Pilot Facilities



Brian Waag, Director Corporate Services
C-FER Technologies

Testing Services



H₂

Codes + Standards



Hydrogen Centre of Excellence

Advancing Hydrogen – Competition 1 Focus

- Hydrogen technologies currently between TRL 3 and 6
 - Also FEED Studies for TRL 7+
- Production, transmission/distribution, storage/carriers, end use
- Maximum \$2M per project, up to 50% of Total Project Cost
- Total of \$20M available

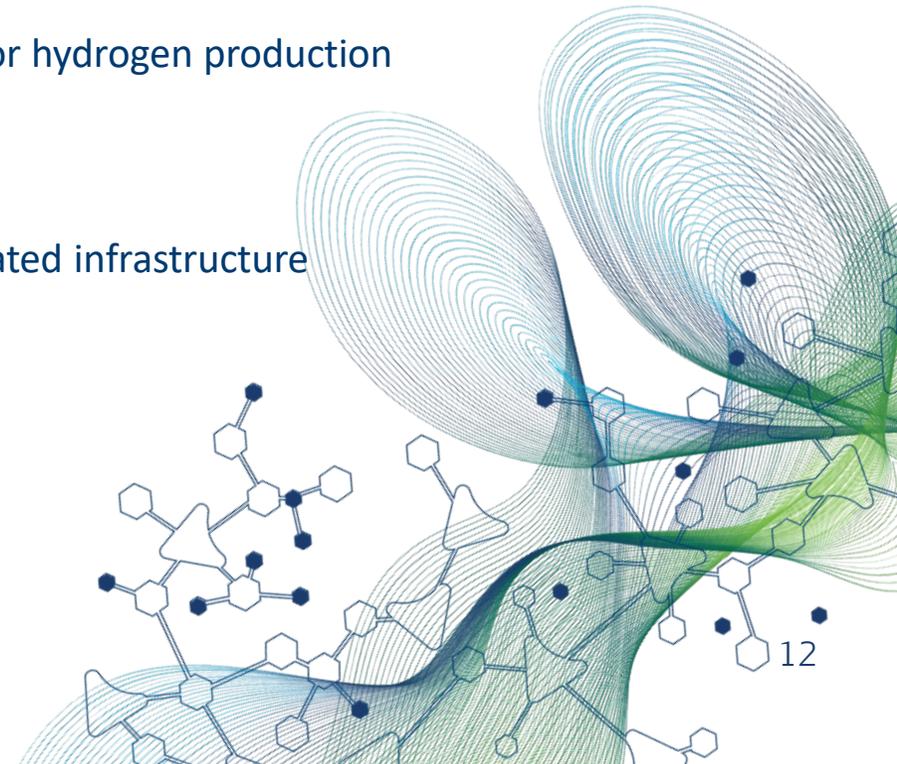
Other Project areas highlighted in yellow

- Projects in the “opportunity analysis”, “partnership building” and “codes and standards” areas will be redirected towards a separate HCOE funding channel to be rolled out later this summer

Focus Areas

Development of testing capabilities should be able to show enabled/indirect benefits in at least one of the following areas:

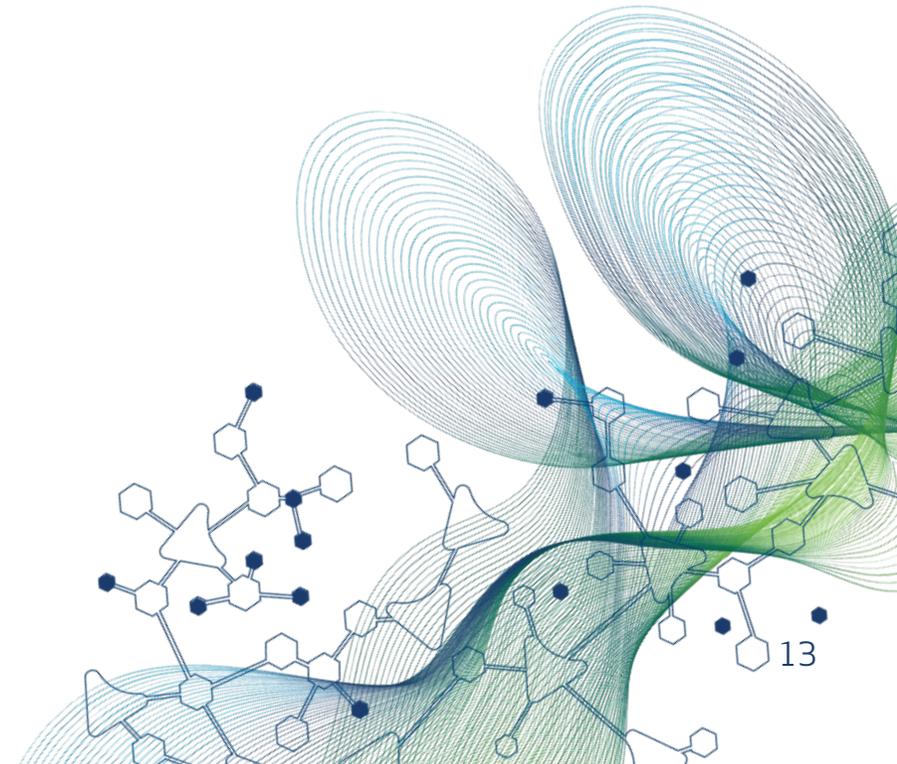
- Production
 - Hydrogen production optimization and yield improvements from established and novel hydrogen production technology pathways
 - Cost reductions in existing and novel production technologies
 - Emissions reductions and environmental performance improvement for hydrogen production
- Transmission / Distribution
 - Determining infrastructure suitability for hydrogen and CCUS use
 - Assessing and improving metallurgy for hydrogen pipelines and associated infrastructure
 - Novel fueling infrastructure



Focus Areas

Continued:

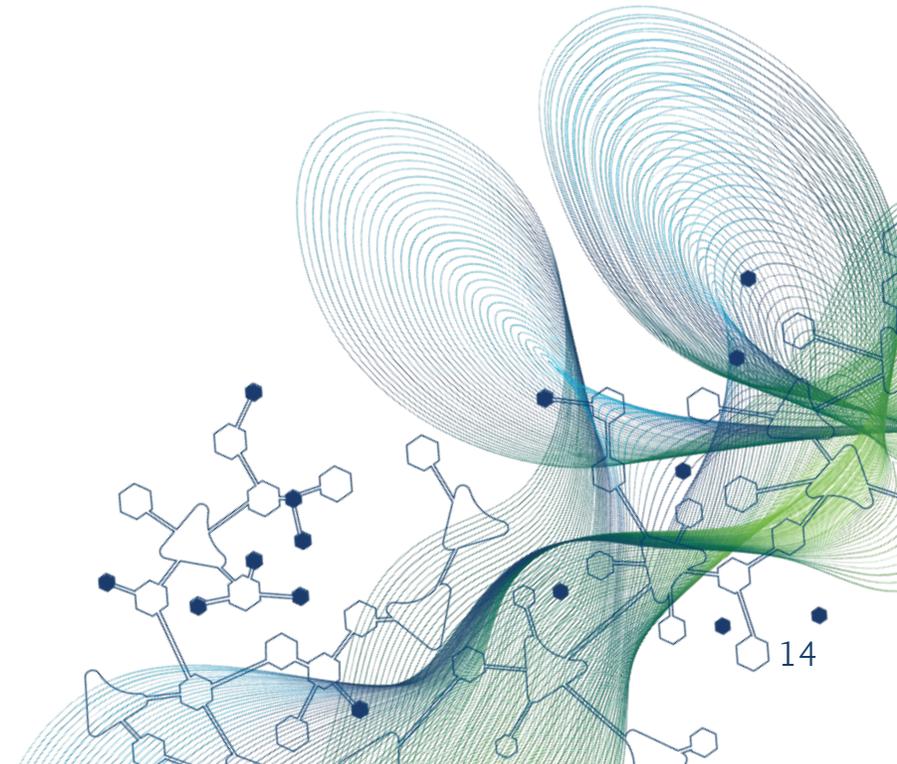
- Carriers / Storage
 - Optimizing technology suitability for surface and subsurface storage
 - Liquid organic hydrogen carriers and other hydrogen carriers
- End Use
 - Hydrogen blending with natural gas for heating
 - Hydrogen use for power production
 - Hydrogen use for heavy transportation
 - Hydrogen export opportunities



Project Targets and Considerations

Development of testing capabilities should be able to show enabled/indirect benefits in at least one of the following areas:

- Cost reduction
- Increasing competitiveness
- Development of HQP
- GHG emission reductions
- Water, land environmental impacts; clean air, water, and soil
- Company creation and new product development
- Economic diversification



Project Targets and Considerations

Proposal Application Evaluation Criteria

The Innovation	Project Management	Impacts and Outcomes
Capital Project Problem and Project Scope	Work Plan, Tasks, and Deliverables	Economic Impacts to Alberta
Market Opportunity and Competitive Analysis	Budget and Funding Commitment	Environmental Impacts
Value Proposition	Project Team	Social Impacts
	Risk Assessment and Mitigation	

Applicant & Partner Eligibility

- Demonstrate a need or potential for use by Alberta Industry or other end-users
- Collaboration with other partners is highly encouraged and projects that demonstrate end user engagement and formal partnerships, including matching industry funding, will receive additional consideration
- Partnerships do not create a conflict of interest
- Be in good financial standing with Alberta Innovates, InnoTech and C-FER
- Federal funding agencies (e.g. NSERC, NRCan, Prairies Can, etc.) are considered eligible partners
- All projects must be completed before March 31, 2025



Application Process

Note: Dates subject to change

Online Portal Instructions

Step 1: Register as an applicant on SmartSimple: <https://albertainnovates.smartsimple.ca>

Step 2: Select “Hydrogen Centre of Excellence” on Reviewer Dashboard

Step 3: Complete each section in the proposal, provide attachments as necessary

Step 4: Review and check that all of your information is provided, and you meet the criteria

Step 5: Submit proposals before the deadline: **September 6, 2022: 5:00 p.m. MST**

Step 6: Notifications of results will be sent during the week of October 4.

If accepted to submit a full proposal:

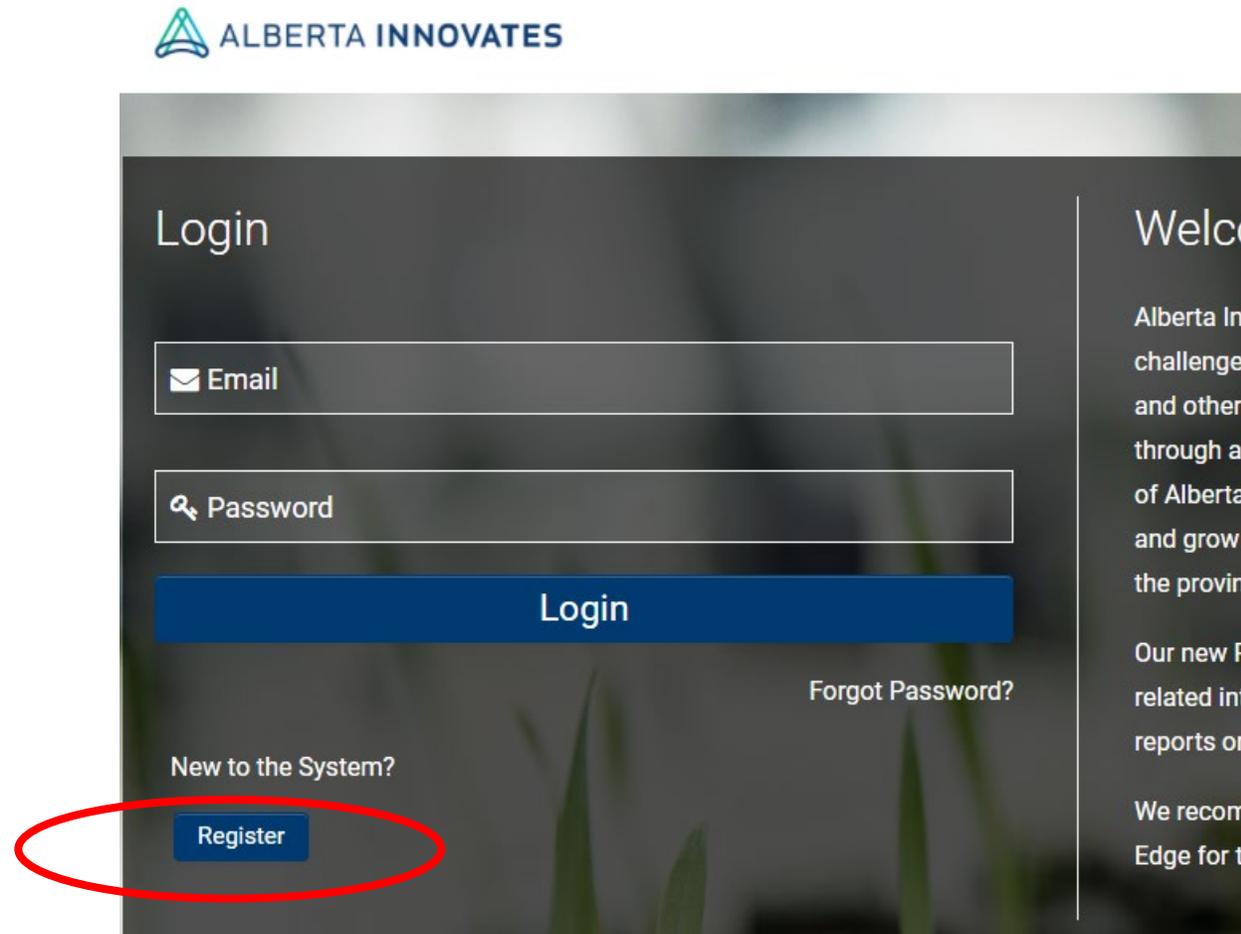
Step 7: Submit a full proposal before the deadline: **November 18, 2022 5:00 PM MST**

Final notifications during the week of **January 6, 2023**

Applicant Process

Online Portal Instructions

Step 1: Register as an applicant on SmartSimple: <https://albertainnovates.smartsimple.ca>



ALBERTA INNOVATES

Login

Email

Password

Login

Forgot Password?

New to the System?

Register

Welcome

Alberta Inn
challenges
and others
through ap
of Alberta's
and grow t
the provinc

Our new Po
related inte
reports on

We recom
Edge for th

Online Portal Instructions

- Step 2: Select "Funding Opportunities"

Welcome Doc Brown



Organization Profile



Personal Profile



Change Password

Applications

Click here to view all of your applications.



Funding Opportunities

0

Draft Applications

0

Submitted Applications

0

Approved/Declined
Applications



Online Portal Instructions

- Step 3: Select “Apply Now” for the Hydrogen Centre of Excellence

Funding Opportunities

** Please ensure you have read the Program Guide for the Program you are applying for, and that you meet the eligibility requirements of the Program, prior to starting your Application. **

NOTE: Unsubmitted Applications to Continuous Intake Programs (i.e. Programs with no Competition Deadline) will be automatically deleted if not modified in 90 days. Unsubmitted Applications to Program Calls will be automatically deleted in 30 days after the Competition Deadline.

 1-15 of 15

Program Name	Competition Name	Competition Deadline	Program Guide	Program Home Page	
Hydrogen Center of Excellence - Hydrogen Initiative	HCE - HI Competition			Link	<input type="button" value="Apply Now"/>
Chronic Wasting Disease Research	CWD - July 2022 Call		Link	Link	<input type="button" value="Apply Now"/>
Water Innovation Program	Water Innovation Program 2022 Call for Proposals	15/09/2022	Link	Link	<input type="button" value="Apply Now"/>
Ecosystem Development Partnerships Program	EDP - 2022	24/08/2022	Link	Link	<input type="button" value="Apply Now"/>
Agri-Food and Bio-Industrial Innovation Program	Agri-Food and Bio-Industrial Innovation Program Competition		Link	Link	<input type="button" value="Apply Now"/>
Clean Resources Continuous Intake Program	Clean Resources Continuous Intake Program		Link	Link	<input type="button" value="Apply Now"/>

Online Portal Instructions

- Step 4: If you see the red text, click “Save Draft”

New Grant

Program Name:

Cycle Name: [#{?object=utaproviderL2}\$Name\$#]



The red * before a question indicates that it is mandatory for submission.

******Please click on Save Draft before beginning the Application******

Some functions of this Application, as well as any system generated fields, will not be present until a draft is saved.

Please Note: the Application **DOES NOT** save automatically; remember to save early and save often.

Generate EOI PDF

INSTRUCTIONS AND DISCLAIMER

APPLICANT INFORMATION

REPRESENTATIVE INFORMATION

NON-CONFIDENTIAL SUMMARY

PROJECT OVERVIEW

PROJECT WORKPLAN, BUDGET AND TEAM

IMPACTS

ATTACHMENTS

Instructions and Disclaimer

This Application form collects pertinent information about the Investment being requested. This enables Alberta Innovates to assess the merits of the proposed Application and its fit with our strategic priorities and corporate goals. The Applicant must complete the Application in its entirety. Applicants that fail to complete all mandatory sections may not be considered. It is essential that you read and understand the Program Guide before completing this Application. All capitalized words or terms which are not defined within this Application have the respective meaning as set out in the Program Guide or Investment Agreement. In this Application, the term “you” and “Applicant” are used interchangeably.

To complete this Application, move from left to right through the tabs above. If you require assistance in completing your Application, please contact the Alberta Innovates’ representative listed in the Program Guide. If you are unsure who to contact, please email inbox_grants@albertainnovates.ca.

The Application will be reviewed by experts who are within and potentially outside of Alberta Innovates. These experts will provide their recommendations to Alberta Innovates and Alberta Innovates may, at its sole and absolute discretion, provide constructive feedback to the Applicant based on the expert reviews. At no time will Alberta Innovates disclose information about the reviewers to the Applicant and the Applicant is not entitled to access or review the experts’ recommendations.

It is Alberta Innovates policy that any applications that involve the payment of a contingency fee will be rejected.

Alberta Innovates will use its reasonable efforts to inform the Applicant of the Investment determination made in respect of an Application in a timely fashion. Any failure to inform the Applicant of the Investment determination regarding an Application will not result in any obligation or liability of Alberta Innovates to the Applicant or any other interested party.

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NEXT >

Save Draft

Submit Application

Withdraw Application

Online Portal Instructions

- Step 5: Fill out the application (“save Draft” often!)

222300686

Program Name: Hydrogen Center of Excellence - Hydrogen Initiative

Cycle Name: HCE - HI Competition

The red * before a question indicates that it is mandatory for submission.

[Generate Intake Form PDF](#)

[INSTRUCTIONS AND DISCLAIMER](#) [APPLICANT INFORMATION](#) [REPRESENTATIVE INFORMATION](#) [NON-CONFIDENTIAL SUMMARY](#) **[PROJECT OVERVIEW](#)** [ATTACHMENTS](#) [CONSENT](#)

* Provide an overview of the Project, including the methodology, main objectives, deliverables and anticipated outcomes:

Consider including the following elements: problem-solution fit, market opportunity and competitive analysis, value proposition, work plan, budget and funding commitment, project team, and economic, environmental and social impacts to Alberta. Feel free to include attachments as needed.
(2800 Words Max)

2800 words left

* Complete the Project Budget Summary Table:

Ensure the information in the Project Summary Table aligns with the Program requirements.

[Click here to open the Project Summary Table](#)

Project Summary Table

[← BACK](#)

[Save Draft](#)

[✓ Submit Application](#)

[Withdraw Application](#)

Online Portal Instructions

- Step 6: Submit

222300669

Program Name: Hydrogen Center of Excellence - Hydrogen Initiative

Cycle Name: HCE - HI Competition

The red * before a question indicates that it is mandatory for submission.

 Generate Intake Form PDF

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CONSENT

Please Note: unless otherwise noted, the only files that can be uploaded are of the PDF file format. Please convert your files to PDF before uploading. PDFs may be combined prior to uploading, to reduce the number of uploaded files.

Supporting Documents Referenced in the Application:

Upload any documents that
are referenced in the
Application.



◀ BACK

NEXT ▶

Save Draft

✓ Submit Application

Withdraw Application



HCOE Competition 1 Reviewer Timeline

Date	Planned Activity (dates subject to change at AI's discretion)
July 20, 2022	Launch of open call
July 28, 2022	Webinar
Sept 6, 2022	Deadline for Intake proposal submissions 5:00 PM MST
Sept 7-30, 2022	Reviewer Intake proposal evaluation
Oct 7, 2022	Applicant Notifications
Nov 18, 2022	Deadline for Full Proposal submissions 5:00 PM MST
Nov 22-Dec 16, 2022	Reviewer Full Proposal evaluation
January 6, 2022	Notification of project funding and contracting

Frequently Asked Questions

Question	Answer
Is there a stacking limit?	No, there is no stacking limit for this call. However, we do consider commitment status and “skin in the game” during the evaluation process.
Is the call open to applicants from outside of Alberta?	Yes, the call is open to applicants outside of Alberta, but the project will need to show substantial benefit to Alberta (e.g. local jobs, use of local contractors, testing in Alberta, commercial applicability in Alberta, etc.)
Is the proposal material kept confidential?	Yes, the material is kept behind the Alberta Innovates firewall and all external proposal reviewers are required to sign NDAs. Internal reviewers are protected by Alberta Innovates and Gov’t of Alberta confidentiality requirements.
Are the results of the project shared publicly?	Successful applicants will complete a public final report and an internal confidential report. The public final report will be posted on Alberta Innovates’ website.
Can I submit multiple applications?	Yes, there is no limit on the number of applications. It is recommended that each application be on entirely different scope to differentiate them clearly.
Do I own my new IP?	Yes, the intellectual property remains with the proponent.
I had a computer issue and missed the deadline, can I still submit?	No.

Q&A

Bryan.Helfenbaum@AlbertaInnovates.ca
David.VanDenAssem@AlbertaInnovates.ca

