



Natural Resources
Canada

Ressources naturelles
Canada

Energy Innovation Program: CCUS RD&D: Capture Expression of Interest Information Session – August 2022

Presented by: The Office of Energy Research and Development

Canada

Housekeeping

- Submit your questions via the Q&A button on your Zoom control panel
- All questions & answers will be visible to everyone, but you can submit your questions anonymously
- General questions only
- Contact us at EIP-CCUS.PIE-CUSC@nrcan-rncan.gc.ca with any outstanding questions or if you experience any technical difficulties



Agenda

- Program Overview
- CCUS RD&D Call
- Capture Focus Area
 - Expected Outcomes
 - Eligibility Criteria
 - Funding & Support
 - Application Process & Timelines
 - Evaluation
- Equity, Diversity, and Inclusion
- Q&A



Program Overview

- The Office of Energy Research and Development has over 40 years of experience delivering funding programs in the area of energy innovation and clean tech
- Energy Innovation Program is our flagship grants and contributions funding program
- We are delivering on the Budget 2021 commitment of \$319M over seven years for CCUS RD&D
 - CCUS FEED studies call
 - CCUS RD&D call

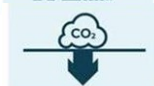


CCUS RD&D Call

- We are planning three focus areas, with staggered timelines:



Capture



Storage/Sequestration



Utilization

Scopes & Timelines (TBC)

Storage / Sequestration	Characterize and develop safe, permanent sub-surface CO ₂ storage, and technologies that support efficient storage opportunities across Canada	Fall 2022
Utilization	Expand the strategic uses of CO ₂ , and support the development of cost and energy efficient utilization pathways	Winter 2023



Capture Focus Area: Expected Outcomes

- Aims to support the RD&D of next-generation CO₂ capture technologies and processes that have the potential to significantly reduce capital and/or operating costs of capturing CO₂ and increase applicability to different emission sources, sizes, and CO₂ concentrations compared to commercially available, amine-based CO₂ capture technologies
 - May be achieved through improvements in capture efficiency and/or total facility capture rate, process intensification and/or energy efficiency (i.e. reducing the energy per tonne of captured CO₂), development of advanced low-cost materials and CO₂ treatment technologies, reduction of waste and environmental impacts of capture technologies, etc.
- Aims to support technologies that will result in significant GHG reductions in line with net zero by 2050



Capture Focus Area: Eligible Applicants

- Legal entities validly incorporated or registered in Canada, including:
 - For-profit and not-for-profit organizations
 - Indigenous organizations and groups
 - Community groups
 - Canadian academic institutions
- Provincial, territorial, regional, and municipal governments and their departments and agencies



Capture Focus Area: Eligible Projects

- Open to projects that advance technologies that capture CO₂ from industrial sources or advance negative emissions technologies that use solvents, sorbents, minerals, membranes, oxy-combustion, cryogenic separation, chemical looping, or other novel concepts. More specifically:
 1. CO₂ capture process development (including novel cryogenic and hybrid processes)
 2. Materials development and CO₂ capture chemistry (e.g. advances solvents, adsorbents, metal-organic frameworks, covalent organic frameworks, membrane materials, hybrids)
 3. Membrane-based separation technologies
 4. CO₂ purification and treatment (including compression for the purpose of purification)
 5. Applications of artificial intelligence, machine learning, or other computational methods for development of CO₂ capture – materials and processes
 6. Design improvement to increase input flexibility (e.g. range of flue gas compositions) and operability (e.g. quicker start-ups, better energy integration)
- Must be between **Technology Readiness Level 2 and 7**
- Projects that replicate operating commercial CCUS facilities as well as technologies or techniques that remove air contaminants from flue gas are **ineligible**



Capture Focus Area: Eligible R&D Activities

- Development, assessment, testing and integration of novel and innovative equipment, software and methodologies
- Analytical tools and modelling software
- Pre-demonstration field trials – limited duration tests designed to identify further R&D needs before a technology can proceed to a pre-commercialization demonstration with limited expectation of long-term operation
- Capacity building and training (where applicable)
- Assessments or characterization studies, including data compilations and syntheses, where there is a significant natural resources sectors-related knowledge gap



Capture Focus Area: Eligible Demo Activities

- The permanent (for the normal life of the equipment) installation of a pre-commercial technology with the intent that it continues to operate in its intended operational environment
- Permanent modification of existing processes, equipment, or systems to accommodate an innovative technology or process
- The permanent installation of equipment and/or infrastructure to support a demonstration or multiple demonstrations
- Associated costs for the engineering, design and permitting of a permanent installation as identified above, including engineering and design costs if supported or required as part of a demonstration
- Operation, performance testing, and analysis of pre-commercial equipment in its intended environment to assess performance of an innovation



Capture Focus Area: Funding & Support

Type of Project	Minimum Program Contributions	Maximum Program Contributions	Project Life
R&D (up to 75% of total project costs)	\$500,000	\$2,500,000	Up to 5 years
Demonstration (up to 50% of total project costs)	\$1,000,000	\$5,000,000	Up to 5 years

- Stacking of funding (i.e. total government support for a project) will be supported to a maximum of 100% of eligible expenditures. However, preference will be given to projects that leverage funding from non-government sources.



ENERGY INNOVATION PROGRAM Application Process

PHASE 1 – EXPRESSION OF INTEREST (EOI)



1

DETERMINE YOUR ELIGIBILITY TO APPLY

Review the Applicant's Guide

2

COMPLETE AND SUBMIT EOI

Download & complete fillable pdf EOI application; submit to EIP-CCUS.PIE-CUSC@nrcan-rncan.gc.ca

3

EOI EVALUATION

EOI review by technical expert panel

4

EOI RESULTS

Notification of EOI results; successful applicants invited to Full Project Proposal phase

PHASE 2 – FULL PROJECT PROPOSAL (FPP)

Invited Applicants Only



5

REVIEW FPP GUIDE

6

COMPLETE & SUBMIT PROPOSAL

Prepare and submit FPP

7

PROPOSAL EVALUATION

Proposal review by technical expert panel

8

PROJECT SELECTION

Applicants to be notified of results followed by due diligence assessment



Capture Focus Area: Timelines

Application Process	Dates
Open for EOI Applications	July 6, 2022
Deadline for EOI Applications	October 3, 2022 11:59pm EDT
Notification of EOI Results	Winter 2023 (TBD)
Deadline for FPP Submissions	Spring 2023 (TBD)
Project Selection/Notification	Spring/Summer 2023 (TBD)
Due Diligence Process	Summer 2023 (TBD)
Negotiating and Signing of Contribution Agreements	Summer/Fall 2023 (TBD)



Capture Focus Area: Expression of Interest Evaluation

- A technical review committee will evaluate across these sections:

Sections	Weighting	Allotted Space
Technology / Innovation	30 Points	3,000 Characters
Project Implementation Plan	15 Points	2,000 Characters
Team / Partners	10 Points	1,500 Characters
Path to Scale / Target Market	10 Points	2,000 Characters
IP Generation Strategy	5 Points	750 Characters
Social and Economic Benefits	10 Points	2,000 Characters
Environmental Benefits	20 Points	2,000 Characters

- See Applicant's Guide or Application Form for additional guidance



Equity, Diversity, and Inclusion (EDI)

- Questions on EDI plan, organizational breakdown across diversity characteristics, and public commitment to EDI
- Voluntary & not evaluated
- May be used to track progress on increasing workforce diversity and to inform future program and policy development



Questions?

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