



# NATURAL GAS CHALLENGE

*Unlocking Innovation  
Across Alberta's Value Chain*

**ONLINE SUBMISSION:**  
[erims.outcome-plus.com](https://erims.outcome-plus.com)

**DEADLINE:**  
December 19, 2019  
5:00 PM MST (UTC-7h)

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## Legal Notice

Emissions Reduction Alberta is a registered tradename of the Climate Change and Emissions Management (CCEMC) Corporation and is referred to as ERA throughout this document. By submitting an Expression of Interest (“EOI”), you confirm that you have read, understand and accept the information contained in this Call for Expressions of Interest and, that each of you, the applicant (the “Proponent”), and any project partners agree as follows:

- a) ERA may at any time suspend, terminate, cancel, withdraw, amend or alter all or any portion of this request for proposals (“RFP”) EOI stage (“EOI Stage”), including but not limited to the EOI requirements, the EOI selection and review process and the EOI eligibility criteria.
- b) ERA reserves the unqualified right to accept or reject any or all EOIs for any reason. ERA is not required to accept the highest ranked EOI nor is it required to accept any EOI recommended for advancement to the full project proposal (“Full Project Proposal”) stage (“FPP Stage”) by the applicable ERA evaluators.
- c) The final decision with respect to the projects to be included in the EOI short-list rests solely with ERA Board of Directors (“Board of Directors”). The Board of Directors’ evaluation of EOIs may be based on, but is not in any way limited to, the criteria set out in this RFP. The Board of Directors may consider any criteria determined by the Board of Directors to be relevant to ERA’s mandate, regardless of whether such additional criteria have been disclosed to the Proponent.
- d) EOIs that do not comply with the requirements described in this RFP may be rejected in whole or in part or not considered by ERA. ERA reserves the unqualified right to accept or reject a non-compliant EOI.
- e) This EOI Stage is an invitation for EOIs only. It is not an offer and the submission of an EOI does not create a contract or agreement of any kind between ERA and the Proponent.
- f) No conduct, act or omission of CCEMC, CCEMC operating as ERA, or its directors, officers, consultants, project advisors, agents, servants and their respective successors and assigns (collectively the “ERA Parties”) other than a written notice to the Proponent in writing signed by an authorized person for ERA, will constitute an acceptance of an EOI.
- g) Acceptance of an EOI does not create any binding contract between ERA and the Proponent. ERA shall not be obligated in any matter whatsoever to any Proponent until a written contribution agreement (“Contribution Agreement”) between CCEMC operating as ERA and the Proponent has been duly executed relating to an approved FPP.
- h) As between the parties, the EOI and all documents and materials you submit to ERA in connection with the EOI Stage and all intellectual property in and to the foregoing are the exclusive property of ERA immediately upon delivery to ERA. For clarity, this refers to the materials themselves, not to any technology or innovations disclosed or discussed in them. Intellectual property developed during the course of the project will be addressed through the Contribution Agreement and will normally be owned by the Proponent.

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- i) You, the Proponent and any project partners will keep this EOI Stage confidential and will not use, reproduce or distribute it, any portion of it, or any data, information, drawings, or specifications included in or provided with it except as necessary to prepare an FPP as requested by ERA.
  - j) Neither ERA nor any of ERA Parties will have any liability whatsoever to you, the Proponent or any project partners, or any of them, in connection with this EOI Stage or any EOI prepared in response to it.
  - k) You, the Proponent and any project partners will not make a claim against CCEMC, CCEMC operating as ERA or ERA Parties for any reason whatsoever or howsoever relating to this EOI Stage. You are undertaking the expenditures required to prepare and submit an EOI entirely at your own risk, and you waive any right and release ERA and ERA Parties from any demands, liability, claim or recovery for costs, expenses, or damages incurred whatsoever or howsoever arising out of or relating to this EOI Stage or any EOI prepared in response to it, whether such right or claim arises in contract, negligence or otherwise.
  - l) ERA takes no responsibility for the accuracy of the information supplied during this EOI Stage process by ERA or ERA Parties.

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# 1 Introduction

## 1.1 ERA

**Emissions Reduction Alberta** (“ERA”) is a registered tradename of the Climate Change and Emissions Management (CCEMC) Corporation. For 10 years, ERA has been investing the revenues from the carbon price paid by large final emitters to accelerate the development and adoption of innovative clean technology solutions. Since establishment in 2009, ERA has committed over \$550 million toward more than 160 projects that are helping to reduce GHGs, create competitive industries, and are leading to new business opportunities in Alberta. These projects are estimated to deliver cumulative GHG reductions of greater than 40 million tonnes by 2030.

## 1.2 Document Scope

This Call for Expressions of Interest (“Call”) is inviting project proposals to be evaluated in a competitive funding process. The process is divided into two stages, the Expression of Interest (“EOI”) stage and the Full Project Proposal (“FPP”) stage, followed by Contribution Agreement development and execution. These instructions provide information about the EOI stage only. Information specific to the FPP stage will be available when FPP invitations are made, which will address preparation and evaluation of FPPs for applicants who are successful at the EOI stage. An overview of ERA’s funding process can be found on the ERA website at: <http://eralberta.ca/apply-for-funding/#era-funding-process>.

**Note:** Applicants who have questions about the EOI process or who wish to discuss their potential submission with ERA are invited to email [applications@eralberta.ca](mailto:applications@eralberta.ca). Inquiries will be directed to appropriate personnel within ERA.

# 2 Call for Proposals Scope

## 2.1 Focus Area

Alberta’s natural gas industry is an important part of our energy story. The industry is more than 100 years old and has evolved significantly since inception. Today, natural gas is a critical resource, providing heat and power for Alberta’s residential, commercial, and industrial sectors. Natural gas is the least GHG emitting of traditional fossil fuels, and a global shift toward natural gas from coal- and oil-based resources is underway. Alberta is well-positioned to be a world leader in this

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movement, with Alberta's natural gas resources similar to that of the oil sands in terms of future economic potential.<sup>1</sup>

However, Alberta's natural gas industry faces competitive pressures due to low commodity prices, inadequate transmission capacity, and global GHG reduction targets. Barriers to investment in emissions saving technologies include harsh operating conditions, the need to work with existing assets, and the challenge of offering competitive rates of return. ERA's Natural Gas Challenge has the opportunity to advance novel technologies to help alleviate these pressures and ensure the resiliency of Alberta's natural gas industry.

This Call is seeking innovative technology solutions that reduce GHG emissions across Alberta's natural gas value chain, including **upstream, midstream, and downstream operations** such as natural gas production, processing, storage, transportation, distribution, and conversion to value-added products. Examples of potential areas of interest for this Call include but are not limited to:

- New technology for production or processing of natural gas
- Addressing natural gas leaks and fugitive emissions
- Alternatives to flaring and venting
- First-of-kind industrial efficiency improvements at natural gas operations
- Renewable/synthetic natural gas production
- Innovation for transportation of natural gas
- Technology for natural gas fueled transportation and mobility
- Novel technology for conversion of natural gas to value added products including electricity, hydrogen, liquid fuels, chemicals and other products

## 2.2 Project Structure

Funding made available through this process is provided for completion of projects with well-defined objectives, milestones, deliverables, and timelines. Applicants must clearly delineate the scope of the project for which ERA funding is being requested and the GHG reduction potential associated with that scope of work. Any related work completed concurrently or before the project term but outside the scope of the project may be discussed in the proposal but should be clearly indicated as such.

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<sup>1</sup> Government of Alberta – Roadmap to Recovery: Reviving Alberta's Natural Gas Industry

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## 2.3 Stage of Development

EOIs are invited for projects that advance innovation to the stages of field piloting, commercial demonstration, or first-of-kind commercial implementation, as described below:

- **Field Pilot:** At this stage the technology or innovation is ready to be field tested in an operational environment. Projects in this category include scale up of prototypes to representative pilot scale and subsequent in-field testing of pilot units.
- **Commercial Demonstration:** At this stage of development, the technology or innovation is approaching the final commercial product and representative systems have been built. Projects in this category include demonstration of near- or fully-commercial scale systems in an operational environment.
- **First-of-Kind Commercial Implementation:** At this stage, the technology is ready for first-of-kind commercial deployment. Projects in this category will involve design, construction, and operation of the technology in its final commercial form, with the intent to operate the technology for its full commercial life.

**Note:** Applicants must demonstrate how the proposed technology or application thereof is an innovative solution for emissions reductions in Alberta. This may include aspects such as first-of-kind demonstration of novel technological solutions, or innovative adaptation of solutions that have been implemented elsewhere but have not been deployed in Alberta. ERA funding will not be provided to address only a financial barrier or for projects that involve the implementation of business-as-usual technology.

## 2.4 Project Location

All projects supported through this Call must demonstrate a clear and justified value proposition for reducing GHG emissions in Alberta. Technology solutions can originate from anywhere globally, but must be piloted, demonstrated, or implemented in Alberta. Projects that involve demonstration, deployment or implementation of a technology at multiple sites are eligible for funding under this Call.

## 2.5 Eligible Applicants

This Call is open to all categories of lead applicant, including technology developers, industry, industrial associations, large organizations, small and medium-sized enterprises (SMEs), research and development (R&D) organizations, universities, municipalities, not-for-profit organizations, government research labs, and individuals. Applicants are not required to be located in Alberta, but all applicants must demonstrate a clear value proposition for the province.

Collaboration between multiple organizations is eligible and encouraged for this opportunity. Collaboration between partners can often represent a strong value proposition by demonstrating opportunities for technology validation, commercialization, and sharing of results. This Call is

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focused on advancing technology solutions. As such, involvement from technology providers/developers is critical.

Applicants are encouraged to engage and include Alberta's post-secondary and research institutions in project consortia where appropriate. These partnerships can offer multiple benefits, including the attraction and training of highly skilled workers who can increase Alberta's innovation capacity in the areas of focus for this Call.

There are no restrictions on the number of EOIs that can be submitted by any applicant. However, applicants are encouraged to be selective and bring forward only the most promising and highest quality applications.

Projects or portions thereof that have received ERA or CCEMC funding are not eligible to receive further ERA funding for the same development. However, applicants may request support for a new phase of development that builds on and sufficiently advances a previously-funded project.

## 3 Terms of Funding

### 3.1 Total Funds Available

The total funding available for projects supported through this Call is up to **\$50 million** Canadian Dollars (\$CAD), subject to the discretion of ERA and the availability of funds.

### 3.2 Cost Sharing

The minimum funding request to ERA for any one project is **\$250,000 CAD**, and the maximum is **\$10 million CAD**. ERA will only match contributions toward eligible expenses on a one-to-one (1:1) basis. As such, the maximum ERA contribution to a single project will be no more than **50%** of the project's eligible expenses.

ERA will only match unencumbered cash contributions to the project for eligible expenses. ERA will not match other government funds provided directly for the proposed project (federal, provincial, or international), or future revenue associated with the outcomes of the project such as offset credits or emissions performance credits associated with the project, tax incentives associated with the project (e.g. Canadian SR&ED credits), revenue from sales of the project's end-products (e.g. from offtake agreement), or non-eligible contributions. However, the presence of these revenue sources does not disqualify a project from eligibility and may be noted in the EOI, as the merits of these contributions will be taken into consideration during the evaluation.

For information about eligible expenses and costs, please refer to the ERA *Eligible Expenses and Cost Instructions* document available on <http://eralberta.ca/apply-for-funding>.

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**Note:** Applicants must justify the amount of funding requested. ERA may choose at its sole discretion to award project funding for less than the requested amount.

### 3.3 Project Term

The maximum project length for projects funded under this Call is **three (3) years** from project initiation.

### 3.4 Project Initiation

ERA will only contribute toward go-forward project costs incurred after the date of ERA funding approval. Project-related costs incurred prior to ERA funding approval will be considered out of scope, will not be considered eligible project costs, and are not eligible for fund matching from ERA. Furthermore, no disbursements will be made prior to execution of a contribution agreement with ERA, and any project costs incurred prior to execution of a contribution agreement will not be reimbursed by ERA in the event that an agreement is not executed.

For this Call, successful applicants may request a delayed start date of up to eighteen (18) months after funding approval. This flexibility is provided to allow for alignment with facility operations and scheduled facility turnarounds.

### 3.5 Trusted Partner Funding Leverage

ERA is working in partnership with other funding organizations in Alberta and across Canada. In some cases, there may be an opportunity for ERA to share applicants' proposals with trusted partners and explore possibilities to leverage funding available from these organizations.

During the submission process, applicants will have the opportunity to have their submissions shared with ERA's trusted partners. Please note that ERA will only share these applications for the purposes of exploring further funding leverage and with partners where ERA has a non-disclosure agreement in place. An applicant's preference regarding whether to allow sharing of their application will not influence ERA's assessment of their proposal.

#### 3.5.1 *Natural Gas Innovation Fund*

ERA's *Natural Gas Challenge* is particularly well-aligned with the Natural Gas Innovation Fund (NGIF), a trusted partner of ERA's that was created by the Canadian Gas Association to support the funding of cleantech innovation in the natural gas value chain. ERA and NGIF will work together to explore co-funding opportunities, reduce administrative burden for applicants, and provide innovators with access to potential industry partners.

In addition, NGIF has launched a \$3 million natural gas funding call for proposals targeted toward SMEs that will run in parallel with ERA's *Natural Gas Challenge*. Applicants who would like their ERA proposal to be shared with NGIF for consideration under the NGIF call will have the opportunity to

do so during ERA’s submission process. Similarly, applicants who submit proposals to NGIF through their current \$3 million call may choose to be considered for ERA funding if their applications meet all of the submission requirements described in Section 4 below and submit to NGIF before ERA’s *Natural Gas Challenge* deadline. For further details about NGIF’s \$3 million call, please see <http://www.ngif.ca/>.

## 4 Submission Details

### 4.1 Submission Deadline

The deadline for submission of EOIs in response to this Call is **Thursday, December 19, 2019 at 5:00 PM Mountain Standard Time (UTC-7h)**. Late submissions will **not** be accepted. Applicants are encouraged to complete their submissions well in advance of the deadline. Furthermore, ERA will not accept partial or incomplete submissions. All required content must be uploaded and inserted into ERA’s Emissions Reduction Information Management System (“ERIMS”) at <http://www.eraadmin.ca/> and the submission must be finalized by completing all necessary online steps in order for the EOI to be considered complete. Applicants will receive an automatically-generated email confirming receipt of the EOI upon submission.

### 4.2 Funding Process Timelines

The following timelines are anticipated for the full funding process. Note that ERA reserves the right to alter these timelines or cancel the Call.

Action	By Whom	Timing
EOI Submission Deadline	Applicants	December 19, 2019
EOI Shortlist Notification	ERA	February 2020
FPP Submission Deadline	Applicants	April 2020
FPP Oral Presentation	Applicants	May 2020
Funding Decision Notification	ERA	June 2020

### 4.3 Submission Content

EOIs must be submitted using the ERIMS at [www.eraadmin.ca](http://www.eraadmin.ca). Users must create an account and complete all mandatory forms to submit an application. Each submission must consist of the following:

- **Expression of Interest Document:** This document will form the basis of ERA’s evaluation, and must fully address each of the evaluation criteria.
- **Letters of Support (Optional):** Letters of support from partnering organizations, funding sources, site hosts, etc., may be uploaded as an appendix to the EOI document.

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- **Online Information:** In addition to the documents outlined above, applicants are also required to enter general information about the project into the ERIMS online system.

**Note:** Only the required documents and information described above will be reviewed. Any additional attachments, materials or information appended to the required documents will not be considered during the evaluation.

#### **4.4 Submission Standards**

A response template will be provided on the ERIMS for the EOI document during the application process. Applicants must use the response template to ensure that all necessary information is provided in a consistent and practical manner. Applications that fail to use the template may not be considered.

The final EOI document must be uploaded in PDF format and may be no more than eight (8) letter-sized (8.5" x 11") pages in length, including all text, graphics, and tables. **Any extra pages beyond the limit will be removed from the document and will not be considered by the evaluators.** The document must use Calibri (or Arial) 11-point font with a minimum of 1.0 line spacing. Margins must be no smaller than 2.54 cm (1"). Only one document may be uploaded per submission.

**Note:** The page limit does not include optional letters of support.

## 5 Evaluation

### 5.1 Evaluation Criteria

EOIs will be evaluated based on the following criteria. Each of the evaluation criteria is assigned a relative weighting. Applicants are encouraged to place more emphasis on the higher-weighted criteria.

Criterion	Description	Weight
<b>Technology Opportunity</b>	Proposals will be evaluated on the strength of the proposed technology, the novelty/innovation of the technology or application of the technology, the competitive advantages relative to existing and nascent technologies, and the expected advancement over the course of the project.	25
<b>Project Implementation</b>	Proposals will be evaluated on the strength of the project implementation plan, including achievability of the work plan, the plan to obtain financing for the project, the capacity of the project team, and the strength of support from project partners, where applicable.	20
<b>GHG and Non-GHG Benefits</b>	Proposals will be evaluated on the potential for GHG reductions and non-GHG benefits from Alberta's natural gas industry by 2025, 2030, and beyond. This includes benefits directly/immediately from implementation of the project, from future commercial implementations (e.g. retrofits at existing sites, new builds), and from broader adoption across the industry.	35
<b>Market and Value Proposition</b>	Proposals will be evaluated on the opportunity for commercialization and widespread market adoption of the technology in Alberta, including alignment with market needs, the plan for knowledge transfer/sharing, and the expected pathway toward commercial deployment.	20

**Note:** The size of opportunity and potential for widespread GHG and economic benefits will be taken into consideration during ERA's project selection. ERA reserves the right to consider optimal portfolio balance and strategic mandate alignment when selecting proposals for funding.

### 5.2 Screening Criteria

In addition to the evaluation criteria described above, projects may be screened out based on one or more of the following factors:

- Insufficient GHG reduction potential;
- Insufficient relevance to Alberta and/or insufficient project activity in Alberta;

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- Risk of detrimental side effects (e.g. environmental impacts);
  - Insufficient information provided;
  - EOI not written in English;
  - EOI not sufficiently readable or comprehensible;
  - EOI does not conform to the submission standards;
  - Proposed project is inconsistent with the intent or scope of this Call;
  - Proposed development is assessed to be business as usual.

### 5.3 Next Steps

Some applicants whose EOIs are well aligned with ERA’s mandate, the goals of the Call, and the evaluation criteria will be invited to submit a detailed FPP. Further information regarding FPP submission will be made available at the time FPP invitations are made.

All applicants who submit an EOI through this Call will be notified of ERA’s decision when the EOI review process is complete. Applicants whose proposals are not accepted may arrange a short debrief phone call with ERA to receive feedback. Information about arranging a debrief phone call will be provided in the notification letter.

### 5.4 Note on Proposal Quality

This is a highly competitive process, and not all projects will be shortlisted. Success at the EOI stage depends on the quality of the EOI submitted. Only the highest quality EOIs will be invited to submit FPPs. In this regard, “quality” means both the quality of the proposed project relative to the evaluation criteria and the quality of the written proposal (clarity, completeness, etc.).

## 6 Intellectual Property

Intellectual property will be addressed through a Contribution Agreement between ERA and each successful applicant, and will be specific to the circumstances of each project. However, a few general principles apply:

- Background IP (patents, copyright, software) and third-party technology remains with its original owner(s).
- ERA retains rights to project results, including without limitation the technical data, reports, analysis, and discussion.
- Project outcomes, results, and learnings will normally be made publicly available at the conclusion of the project.
- Project technology (based on patent disclosures) developed as a part of the co-funded activities will be owned by the successful applicant and its partners, in accordance with the IP arrangement between project partners. However, successful applicants will be expected

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to commercialize and/or make the technology available through reasonable commercial terms for the benefit of Alberta.

## 7 Confidentiality

ERA is subject to the *Freedom of Information and Protection of Privacy Act*, RSA 2000, c.F-25 in the course of performing duties and functions and exercising powers delegated to it. All data and records in the custody or under the control of ERA that are required in the performance of duties or functions or the exercise of powers delegated to ERA are subject to the *Records Management Regulation*, Alberta Regulation 244/2001.

Subject to the requirements described above, ERA is governed by a comprehensive Privacy, Data Security and Confidentiality Policy (the “Policy”). The Policy requires that any and all information concerning the business affairs of ERA and its directors, officers, employees and applicants is to be kept private, secure and confidential. Confidential information that is collected, used or disclosed by ERA will be handled in a manner that recognizes both the right of the individual to have his or her confidential information protected and the need of ERA to collect, use and disclose such information for purposes that are reasonable.

To read the entire Policy, visit <http://eralberta.ca/privacy>.