

Intake Guidelines Document for Round 4 Applicants Cleantech Innovations for Natural Gas Production

Natural Gas Innovation Fund Investment Intake Stage

Online Submission: email to info@ngif.ca

Extended Submission Due Date: 3PM Eastern Standard Time (UTC-5h) February 27, 2019

BIRCHCLIFF
ENERGY


Canadian Natural


Chevron


PERPETUAL
ENERGY


PETRONAS




TOURMALINE
OIL CORP.

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LEGAL NOTICE

By submitting an NGIF Investor Deck, you confirm that you read, understand and accept the information contained below, in that each of you, the applicant (the “Applicant”) and any project partners, agree as follows:

- a) The Natural Gas Innovation Fund (NGIF) may at any time suspend, terminate, cancel, withdraw, amend or alter all or any portion of the NGIF Investor Deck requirements, including the NGIF Investor Deck selection and review process and the NGIF Investor Deck eligibility criteria.
- b) The NGIF reserves the unqualified right to accept or reject any or all NGIF Investor Decks for any reason. The NGIF is not required to accept the highest ranked NGIF Investor Deck nor is it required to accept any NGIF Investor Deck recommended for advancement to the NGIF Investment Proposal stage by the applicable evaluators.
- c) The final decision with respect to the projects to be included in the NGIF Investor Deck shortlist rests solely with the NGIF Investment Committee (“Investment Committee”). The evaluation of the NGIF Investor Deck may be based on, but is not in any way limited to, the criteria set out in this NGIF Investor Deck. The NGIF Investment Committee may consider any criteria determined to be relevant to the mandate of the NGIF, regardless of whether such additional criteria have been disclosed to the Applicant.
- d) NGIF Investor Decks that do not comply with the requirements described in this document may be rejected in whole or in part or not considered by the NGIF. The NGIF reserves the unqualified right to accept or reject a non-compliant NGIF Investor Deck.
- e) This NGIF Investor Deck Intake process is by invitation only. It is not an offer, and the submission of an NGIF Investor Deck does not create a contract or agreement of any kind between the NGIF and the Applicant.
- f) No conduct, act or omission of NGIF, or their directors, officers, consultants, project advisors, agents, servants and their respective successors and assigns (collectively the “Funding Parties”) other than a notice to the Applicant in writing signed by an authorized person for NGIF, will constitute an acceptance of an NGIF Investor Deck.
- g) Acceptance of an NGIF Investor Deck does not create any binding contract between the NGIF and the Applicant. The NGIF shall not be obligated in any matter whatsoever to any Applicant until a written contribution agreement (“Contribution Agreement”) between the NGIF and the Applicant has been duly executed relating to an approved NGIF Investment Proposal.
- h) As between the parties, the NGIF Investor Deck and all documents and materials you submit to the NGIF in connection with the NGIF Intake stage (other than information relating to the Applicant incorporated in the NGIF Investor Deck but not directly connected to the NGIF Investor Deck Intake process) are the exclusive property of the NGIF immediately upon delivery to the NGIF. 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 Applicant.

- i) You, the Applicant, and any Project Partners, being organizations responsible for carrying out specific project activities in the manner and scope as agreed between partners with lead partner being the Applicant, will keep the NGIF Investor Deck (other than information relating to the Applicant incorporated in the NGIF Investor Deck but not directly connected to the NGIF Investor Deck Intake process) 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 Investment Proposal as requested by the NGIF.
- j) The NGIF will not have any liability whatsoever to you, the Applicant or any Project Partners, or any of them, in connection with this NGIF Investor Deck Intake process or NGIF Investment Proposal in response to it.
- k) You, the Applicant, and any Project Partners will not make a claim against the NGIF for any reason whatsoever or howsoever relating to the NGIF Investor Deck Intake process. You are undertaking the expenditures required to prepare and submit an NGIF Investor Deck entirely at your own risk, and you waive any right relating to, and release the NGIF from, any demands, liability, claim or recovery for costs, expenses, or damages incurred whatsoever or howsoever arising out of or relating to this NGIF Investor Deck Intake stage or any NGIF Investor Presentation in response to it, whether such right or claim arises in contract, negligence or otherwise.
- l) The NGIF takes no responsibility for the accuracy of the information supplied in the NGIF Investor Deck Intake process by the NGIF.

1 INTRODUCTION

The Natural Gas Innovation Fund (NGIF) is making up to \$3.0 million (CAD) in reimbursable grant funding available to advance cleantech solutions that will create value, advance operational excellence and mitigate environmental impacts in the production of natural gas in Canada. NGIF is offering up to \$1.0 million (CAD) per project, representing as much as 25% of a project’s eligible expenses.

This funding also represents an important opportunity for federal, provincial and industry collaboration and leverage. The “Trusted Partner” relationships that the NGIF has developed with Natural Resources Canada (NRCan), Emissions Reduction Alberta (ERA), Alberta Innovates (AI) and the Province of British Columbia Innovative Clean Energy ICE Fund (ICE Fund) will open the doors for further funding for NGIF projects. Under these relationships:

- NRCan will consider co-funding successful NGIF applicants that have projects which deliver significant GHG reductions and are located in Canada.
- ERA will also consider co-funding successful NGIF applicants for projects that are located in Alberta and deliver significant GHG reductions in the province.
- AI will also consider co-funding successful NGIF applicants for projects that are located in Alberta and deliver significant GHG reductions in the province.
- ICE Fund will also consider co-funding successful NGIF applicants for projects that are located in British Columbia and deliver significant GHG reductions in the province.

The deadline for submissions of Investor Deck is 3PM Eastern Standard Time (UTC-5h) February 27, 2019.

1.1 Document Scope

This document provides information about NGIF and the current funding process for cleantech in production of natural gas. This funding process is divided into three stages:

Stage-1 NGIF Investment Intake	Investor Deck
Stage-2 NGIF Investment Evaluation	Investment Proposal
Stage-3 NGIF Investment Management	Contribution Agreement and Project Management

These instructions provide information about the NGIF Investment Intake Stage - Investor Deck only. Information specific to the NGIF Investment Evaluation Stage - Investment Proposal will be available when the NGIF Investment Proposal invitations are made, and will address the preparation and evaluation of the NGIF Investment Proposal for applicants who are successful at the NGIF Investment Intake Stage - Investor Deck.

1.2 Scope

This funding call is intended for demonstration and deployment projects for new and innovative clean technologies that have strong potential to result in significant improvement for the natural gas production industry.

1.3 Strategic Investment Area

The focus of this natural gas production funding opportunity is on advancing leading technologies in Canada. The NGIF intent is to accelerate technology with near-term market potential (<5 years). Technologies of interest include (but are not limited to):

- **Creating Value:** increase production, reserves and revenues while simultaneously reducing environmental impact
 - E.g. next generation drilling, completions and production technologies, production of valuable byproducts
- **Advancing Operational Excellence:** cost-effective improvements to operations and environmental performance across natural gas production value chain
 - E.g. field, process and equipment optimization; electrification; high efficiency equipment; waste heat utilization; examples of enabling technologies include sensors, artificial intelligence and drones
- **Improving Environmental Stewardship:** allowing producers to meet or exceed environmental regulations at significantly lower cost than incumbent technologies
 - E.g. methane monitoring, fugitive emissions mitigation, advanced water treatment, wellbore integrity

1.4 Project Category

NGIF Investor Decks must be for projects involving field piloting, commercial demonstration, or large-scale deployment of a clean technology at a natural gas production site in Canada.

- Clean technologies can come from anywhere in the world.
- Reduce the quantity of GHG emissions, air quality impact, water usage and/or other quantifiable environmental impacts resulting in clean air, clean water and clean soil when producing the same or greater volume of natural gas.
- Demonstrate first of its kind solutions in the natural gas industry.

NGIF encourages projects that are led by or partnering with First Nations organizations to apply. The ability to build effective and mutually beneficial relationships with Aboriginal People is considered an asset for project evaluations.

1.5 Stage of Development

This Expression of Interest is seeking development and demonstration projects to advance technologies currently at the stage of **Technology Readiness Level 7-9**, as defined below:

- **Field Pilot (TRL 7):** At this stage of development, the technology is ready to be field tested in an operational environment. Projects in this category include scale up of prototypes to representative pilot scale demonstration and subsequent in-field demonstration testing of pilot units.
- **Demonstration (TRL 8):** At this stage of development, the technology 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.
- **Commercial Implementation (TRL 9):** At this stage, the technology is ready for 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.

1.6 Project Financial Requirement

NGIF will execute a Contribution Agreement with the applicant once the applicant demonstrates that the balance of project funds is committed. The applicant shall submit contribution agreements, financial statements, bank statements, and any other information as requested by NGIF to establish balance funding is secured.

This funding call also provides an opportunity to applicants for possible additional funding to the project by NGIF's "Trusted Partners" – Natural Resources Canada (NRCan), Emissions Reduction Alberta (ERA), Alberta Innovates (AI) and the Province of British Columbia Innovative Clean Energy ICE Fund (ICE Fund). To be considered for such additional funding by NGIF's "Trusted Partners", the applicant shall indicate its interest in a letter addressed to NGIF and submit a "Consent to Disclosure of Information" (refer Appendix -1) along with its Investor Deck. Applicants shall note that "Trusted Partners" can participate in NGIF's consensus meeting and will consider only NGIF's stage 1 approved applicants for additional funding. It shall be further noted that NGIF's Trusted Partners evaluation criteria, process, and decision will be governed by their internal process.

1.7 Project Partner Requirement

The applicant can form a partnership with organizations to carry out specific project activities in the manner and scope as agreed between parties. The lead partner in such case shall always be the applicant. Partners can represent companies in the value chain of the technology to be developed and demonstrated.

2 TERMS OF FUNDING

2.1 Funds

The Natural Gas Innovation Fund (NGIF) is making up to \$3.0 million (CAD) in reimbursable grant funding available for this funding round. Eligible projects can apply for **up to \$1.0 million (CAD) per project**. Final approval of funding is subject to the discretion of the NGIF and the availability of funds.

If the technology or the product developed under the project is commercialized or used by the Recipient in a manner that provides economic benefits to the Recipient, Canadian Gas Association (CGA) will be entitled to a reimbursement of the CGA Contribution plus a percentage by receiving the payments from the share of the profits.

2.2 Cost Sharing

The maximum contribution by NGIF to a single project will be no more than **25%** of the project's eligible expenses. NGIF requires matching contributions to the project for eligible expenses.

2.3 Additional Funding Opportunity

The “Trusted Partner” relationships that the NGIF has developed with Natural Resources Canada (NRCan), Emissions Reduction Alberta (ERA), Alberta Innovates (AI) and the Province of British Columbia Innovative Clean Energy ICE Fund (ICE Fund) will provides opportunity to applicants for possible additional funding for NGIF projects.

- NRCan will consider co-funding successful NGIF applicants that have projects which deliver significant GHG reductions and are located in Canada.
- ERA will also consider co-funding successful NGIF applicants for projects that are located in Alberta and deliver significant GHG reductions in the province.
- AI will also consider co-funding successful NGIF applicants for projects that are located in Alberta and deliver significant GHG reductions in the province.
- ICE Fund will also consider co-funding successful NGIF applicants for projects that are located in British Columbia and deliver significant GHG reductions in the province.

To be considered for such additional funding by NGIF's “Trusted Partners”, the applicant shall indicate its interest in a letter addressed to NGIF and submit a “Consent to Disclosure of Information” (refer Appendix -1) along with its Investor Deck. Final approval of possible additional funding is subject to discretion of NGIF's “Trusted Partners” and the availability of funds.

2.4 Project Term

The maximum project length for a funded project is **three (3) years**.

2.5 Eligibility

This is directed at Canadian or international small and medium-sized enterprises (SMEs) including technology development start-ups. For the purpose of this funding round, the following definitions are used:

- Small and medium-sized enterprises are non-subsidiary, independent technology development firms that employ fewer than 500 employees.
- Technology development start-ups are non-subsidiary, independent technology development firms that employ fewer than 100 employees, generates less than \$25M CAD in annual revenues and are focused on developing and scaling up pre-commercial technologies.

2.6 Project Initiation

Projects may commence at any time after the date on which the applicant is notified that the project has been **approved by NGIF**. However, no disbursements will be made prior to execution of the NGIF Contribution Agreement. Project costs incurred prior to receiving notification of the NGIF decision will not be considered eligible as matching funds and will not be eligible for NGIF contributions. Furthermore, applicants are advised that project costs incurred prior to execution of the NGIF Contribution Agreement will not be reimbursed by NGIF in the event that an agreement is not executed or the costs fail to meet eligibility criteria (at the sole discretion of NGIF).

The applicant will be notified by NGIF's "Trusted Partner(s)" on the additional funding approval or otherwise. In the event of such approval, the applicant would be required to execute independent contribution agreement(s)/ contract(s)/ other legal binding document with the participating "Trusted Partner(s)" which would be governed by their body of work. Applicant shall be fully responsible for execution of such agreement(s)/ contract(s).

2.7 Project Location

The project must be demonstrated at a natural gas production sites in Canada owned by one of the following natural gas producers:

- Birchcliff Energy Ltd.
- Canadian Natural Resources Limited
- Chevron Canada Limited
- Perpetual Energy Inc.
- PETRONAS Energy Canada Ltd.
- Shell Canada Limited.

- Tourmaline Oil Corp.

Applicants shall engage and partner by themselves with any of the above natural gas producers to secure a demonstration site for their technologies.

3 SUBMISSION DETAILS

3.1 Submission Deadline

All required content must be submitted via email to info@ngif.ca by 3PM Eastern Standard Time (UTC-5h) February 27, 2019.

3.2 Submission Standards

Applicants shall submit a complete and comprehensive Investor Deck in the template provided by NGIF. Incomplete and non-clear submissions will be rejected.

Applicants must submit their NGIF Investor Deck via email to info@ngif.ca.

Note: Questions for the NGIF Investment Intake Stage - Investor Deck process that are not fully addressed in this document can be sent to info@ngif.ca. Through this contact address, applicants will be directed to appropriate personnel within NGIF to address their questions.

3.3 Timeline

The following timelines are anticipated for NGIF’s full funding process. Note that NGIF reserves the right to alter or cancel the currently anticipated process and deadlines.

Date	Investment Process Step
December 19, 2018	NGIF’s Call for Funding Applications
February 27, 2019	Investor Decks Due
April, 2019	Stage-1 Consensus Meeting, NGIF Innovation Committee
April, 2019	Invitation to Submit Investment Proposals (NGIF and/ or other “Participating Funding Partners”)
May, 2019	Investment Proposals Due
June, 2019	Site Visits
August, 2019	Applicants’ in-person Presentation to NGIF’s Innovation Committee
August, 2019	Stage 2 Consensus Meeting, NGIF Innovation Committee
September, 2019	NGIF Investment Committee Meeting – Investment Decision

4 EVALUATION

4.1 Evaluation Criteria

NGIF Investor Decks will be evaluated based on the following five criteria:

1. Project objective and scope including
 - Technology innovation (scientific basis, intellectual property, competing technologies)
 - Output benefits (economic, environmental, social)
2. Relevance to the natural gas industry (value proposition for end-user, market size, business case – economic model, commercialization path way, market roll-out)
3. Management capability of the company and the project partners
 - Strong and relevant technical and commercial experience, track record of attracting investors and strategic partners, managing projects of similar size and complexity
 - Robust project management team with all relevant project delivery resources and partners
4. Project work plan - clear and appropriate workplan
5. Project finance and budget (project funding, financial strength, budget with risk management plan)

4.2 Screening Criteria

In addition to the evaluation criteria above, projects will be screened to ensure they meet the following factors:

- Applicant meets the eligibility criteria defined in section 2.5, and also 2.3 in case intended for additional funding for the project from NGIF’s “Trusted Partners”;
- The proposed development has sufficient potential for demonstration or deployment for application in to Canada’s natural gas sector;
- The proposed development carries limited risk of detrimental side effects (e.g. environmental degradation);
- Sufficient information is provided for a proper evaluation;
- Technology Readiness Level (TRL) of the project (beginning and end);
- The NGIF Investor Deck is comprehensible and easy to read;
- The NGIF Investor Deck conforms to the submission standards (see Section 3.2);
- The project is innovative and advances business as usual in the natural gas industry.

4.3 Evaluation Process and Next Steps

The applicants with NGIF Investor Decks that are rated highly, determined to be of sufficient quality, and are well aligned with the NGIF mandate will be invited to submit an NGIF Investment Proposal. NGIF's Stage 1 shortlisted applicants who also meet NGIF's Trusted Partners mandate and criteria shall be notified on them being considered for additional funding from our Trusted Partners. Applicants shall note that our Trusted Partners decision to consider NGIF's Stage 1 shortlisted applicants for the next stage of "Evaluation" will be governed by their internal process.

Further information regarding the NGIF Investment Proposal submission, including evaluation criteria and timelines, will be made available at the time the NGIF Investment Proposal invitations are made.

4.4 Note on Proposal Quality

This is a highly competitive process and not all projects will be short-listed. Success at the NGIF Investor Deck stage depends on the quality of the NGIF Investor Deck submitted. Only high quality NGIF Investor Decks will be invited to submit Investment Proposals to "Participating Prospective Funding Partners". 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.).

5 INTELLECTUAL PROPERTY

Intellectual Property will be addressed through the NGIF Contribution Agreement negotiated between NGIF and the 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).
- All IP Rights in Project IP remains vested in the Recipient.
- NGIF retains rights to the project research results, including without limitation the technical data, reports, analysis, and discussion.

6 CONFIDENTIALITY

NGIF and its “Trusted Partner(s)” shall keep confidential all information disclosed to them by the other party relating to this invitation or approved project, except information which:

- Is part of the public domain;
- Becomes part of the public domain other than as a result of a breach of these provisions by either party;
- Either party is required to disclose pursuant to applicable Laws or by a Governmental Authority;
- Can be demonstrated to have been known or available to either party or independently developed by either party;
- Was received in good faith from an independent person who was lawfully in possession of such information free of any obligation of confidence; or
- Is released in accordance with the provisions of the NGIF Contribution Agreement or by the written authorization of both parties.