

# Technical Reviewers' Rating Summary

Proposal Number	<b>G-61-01</b>
Application Title	<b>Breaking New Ground in Flaring Reduction</b>
Submitted By	<b>EERC</b>
Request For	<b>\$2,556,341.00</b>
Total Project Costs	<b>\$5,132,682.00</b>

## Section A. Scoring

<b>Statement</b>	<b>Weight</b>	<b>G-61-01A</b>	<b>G-61-01B</b>	<b>Avg. Score</b>
1. Objectives	9	4	4	36
2. Achievability	7	5	4	31
3. Methodology	8	4	4	32
4. Contribution	8	5	4	36
5. Awareness / Background	5	4	5	22
6. Project Management	3	3	4	10
7. Equipment / Facilities	2	5	5	10
8. Value / Industry - Budget	4	4	4	16
9. Financial Match - Budget	4	5	3	16
<b>Avg. Weighted Score</b>		<b>218</b>	<b>203</b>	<b>210</b>
<b>OVERALL</b>				
FUND		<b>X</b>	<b>X</b>	
TO BE CONSIDERED				
DO NOT FUND				

## Section B. Ratings and Comments

1. The objectives or goals of the proposed project with respect to clarity and consistency with North Dakota Industrial Commission/Oil and Gas Research Council goals are:

**“The continued improvements in gas capture for well operators is an important goal for North Dakota, with the ultimate results being lowering carbon footprint, lowering methane emissions and achieving environmental benefits. I applaud EERC, Advanced Flow Solutions Inc. and Steffes's efforts in this process.”**

**- Reviewer: G-61-01A**

**- Rating: 4 (Very Clear)**

**“”**

**- Applicant**

**“The objective is to facilitate the adoption of state-of-the-art gas capture technology by installation of 30 gas capture units on well pads in the field in North Dakota for evaluation and documentation of the gas capture unit performance. The goal is to show the improved economics and gas capture while further reducing natural gas losses to atmosphere by flaring. The reduced natural gas flaring will translate to increased sales of natural gas and natural gas liquids for increased tax revenues, incomes, and natural gas recoveries.”**

**- Reviewer: G-61-01B**

**- Rating: 4 (Very Clear)**

**“”**

**- Applicant**

2. With the approach suggested and time and budget available, the objectives are:

**“Certainly achievable as a gas capture technology at gas flares and for tank vapors. The partners bring highly qualified engineers and technicians.”**

*- Reviewer: G-61-01A*

*- Rating: 5 (Certainly Achievable)*

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*- Applicant*

**“The project is set to start immediately upon funding approval. Contracts for construction of the gas capture units are in place, awaiting orders from operators requesting installation on their facility for testing.”**

*- Reviewer: G-61-01B*

*- Rating: 4 (Most Likely Achievable)*

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*- Applicant*

3. The quality of the methodology displayed in the proposal is:

**“The methodology appears simplistic in nature but efficacious in practice.”**

**- Reviewer: G-61-01A**

**- Rating: 4 (Above Average)**

**“”**

**- Applicant**

**“The EERC project is well run and managed. The EERC has extensive experience in the design and monitoring of oil and gas project. The operator partners will have a vested interest in helping to prove up the science and technology.”**

**- Reviewer: G-61-01B**

**- Rating: 4 (Above Average)**

**“”**

**- Applicant**

4. The scientific and/or technical contribution of the proposed work to specifically address North Dakota Industrial Commission/Oil and Gas Research Council goals will likely be:

**“The operators are essentially selected to provide diverse well site configurations that will provide significant data on capture of small emission sources. The ability to capture the remaining 5-6% of flared gas provides significant advancement in economics, and environmental protection. This methodology is needed to provide EPA Quad 0 b & c compliance. The tax revenue increase for the State of North Dakota is added bonus.”**

**- Reviewer: G-61-01A**

**- Rating: 5 (Extremely Significant)**

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**- Applicant**

**“The project has the potential to generate increase revenue for operators, royalty owners and investment partners, and increased tax revenues by sending more gas and gas liquids to sale. Additionally, the goal of reducing gas flaring to a minimum, particularly in stranded oil and gas wells without economic options for gas takeaway is an important part of the NDIC flaring reduction goals. The reduced methane release provided by the gas capture unit will minimize methane discharge fees and potentially reduce GHG emissions.”**

**- Reviewer: G-61-01B**

**- Rating: 4 (Very Significant)**

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**- Applicant**

5. The background of the principal investigator and the awareness of current research activity and published literature as evidenced by literature referenced and its interpretation and by the reference to unpublished research related to the proposal is:

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- *Reviewer: G-61-01A*

- *Rating: 4 (Better Than Average)*

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- *Applicant*

**“The EERC, and particularly the principal investigator, Darren Schmidt, is very familiar with the gas capture unit and the science and technology behind the design of the equipment.”**

- *Reviewer: G-61-01B*

- *Rating: 5 (Exceptional)*

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- *Applicant*

6. The project management plan, including a well-defined milestone chart, schedule, financial plan, and plan for communications among the investigators and subcontractors, if any, is:

**“There does not appear to be a milestone chart. The schedule is 12 months during 2025. The financial and plan for communications are well outlined.”**

**- Reviewer: G-61-01A**

**- Rating: 3 (Adequate)**

**“”**

**- Applicant**

**“The timetable is relatively simple due to the flexibility and uncertainty on delivery request times of operators but should be accomplished within the one-year duration of the project funding. A very detailed budget showing the NDIC cost share and the offsetting industry cost share comprising the operator's purchase cost of the gas capture units from the manufacturers.”**

**- Reviewer: G-61-01B**

**- Rating: 4 (Very Good)**

**“”**

**- Applicant**

7. The proposed purchase of equipment and the facilities available is:

**“Polar Bear™ is designed to economically capture small volumes of gas, reprocess within the facility, and maintain gas pressures to keep gas in the pipe. This is an already patented process, with equipment designed for success.”**

**- Reviewer: G-61-01A**

**- Rating: 5 (Extremely Well Justified)**

**“”**

**- Applicant**

**“The equipment purchased, gas capture units, is essential for the project to proceed. The number of units proposed is the amounts considered to provide an adequate sample size to allow testing of multiple operators and multiple producing areas within the testing area.”**

**- Reviewer: G-61-01B**

**- Rating: 5 (Extremely Well Justified)**

**“”**

**- Applicant**



8. The proposed budget “value”<sup>1</sup> relative to the outlined work and the commitment from other sources is of:

**“While on the expense side of projects to be approved by NDIC, this project has a significant return on investment for the operator, for the partners and for the State of North Dakota. It is likely a game changer in the industry and satisfies many of the new regulations recently promulgated by the EPA.”**

***- Reviewer: G-61-01A***

***- Rating: 4 (High Value)***

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***- Applicant***

**“The success of this product will solve a longstanding problem with gas flaring for wells located away from existing gas gathering infrastructure. It seems likely the cost of the program will be quickly recovered, if the gas capture units work as designed.”**

***- Reviewer: G-61-01B***

***- Rating: 4 (High Value)***

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***- Applicant***

9. The “financial commitment”<sup>2</sup> from other sources in terms of “match funding” have been identified:  
**“Both Advanced Flow Solutions and Steffes have total planned to make significant in kind contributions of equipment and personnel. Equipment expenses make up the bulk of the NDIC 50% of the budget.”**

*- Reviewer: G-61-01A*

*- Rating: 5 (Very High Value)*

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*- Applicant*

**“The 50% match commitment is available provided the requested number of operators opt into the program to purchase 30 gas capture units. It would seem likely there are plenty of candidate operators, especially along the margins of the Williston Basin.”**

*- Reviewer: G-61-01B*

*- Rating: 3 (Average Value)*

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*- Applicant*

## General Comments

“Polarbear TM presents a unique, yet simplistic solution to emissions reduction and gas capture. ”

**- Reviewer: G-61-01A**

“A particularly exciting aspect of this project is that the gas capture unit will be constructed here in North Dakota, and the design is a product of personnel and institutions also located within the state of North Dakota. It will be used to enhance the revenues of the operators, mineral and royalty owners, state and local tax coffers, create jobs for North Dakotans, etc. It is literally a win, win, win!”

**- Reviewer: G-61-01B**

*1 “value” – The value of the projected work and technical outcome for the budgeted amount of the project, based on your estimate of what the work might cost in research settings with which you are familiar. A commitment of support from industry partners equates to a higher value.*

*2 “financial commitment” from other sources – A minimum of 50% of the total project must come from other sources to meet the program guidelines. Support less than 50% from Industrial Commission sources should be evaluated as favorable to the application; industry partnerships equates to increased favorability.*