

Project Profile

Project Name:	Pneumatic Pump Alternatives for Cold Weather
Project Number:	EI-2016-07
Proponent:	GreenPath Energy
Funding Envelope:	Environmental Impacts
Timeframe:	September 1, 2015 – April 30, 2016

Project description

The key question that this project will solve is the applicability of non-venting solutions to pneumatic pump emissions in upstream oil and gas in Northern BC/Alberta operations.

Currently the most common alternative is a “Solar Chemical Pump” – which relies upon solar panels and battery bank to power a motor to inject chemicals. The reliance upon solar power has issues at northern latitudes due to lack of sunlight as well as areas of high tree cover, which further reduces available sunlight, can potentially compromise the operations of solar systems. Current alternatives include the “Blair Air” system, the Enviropump 510, CataFlow system, methanol based fuel cell applications, low grade utility power (Arc Resources Sunrise project) as well as an old technology that may have become viable due to a change in regulation regarding pressure vessels - methanol spheres.

Other alternatives will also be examined; the fundamental issue is the economics and reliability of remote power to provide motive force for pumps.

The main benefit from this research is a transparent understanding of non-venting solutions to replace gas driven chemical solutions. There is an expectation within industry that gas driven pneumatic pumps will be phased out by 2020. There is no wide understanding if there are viable alternatives that take into account the challenges of Canadian geography. If there are circumstances where non-venting solutions are not viable, stakeholders including government officials and non-government environmental organizations need to be made aware of these limitations.

Project approach

The project will be split into two phases:

1. Evaluation of current cold weather alternatives – Solar Chemical Pumps, on site power generation.
2. Evaluation of emerging cold weather alternatives – not limited to methanol based fuel cells (Ensol), CataFlow (Thermal Electric Generators to run pumps + heat trace), pressure let down (Blair-Air / Enviropump), vent gas capture.

The first phase will largely be a desktop review based on data developed by organizations who submit information for the BC GHG Reporting regulation and note the existence of solar pumps in their inventory. These sites can be referenced to investigate performance in cold weather/high latitude high tree-line environments. Operators in areas with Solar pumps will be contacted and interviews on system performance conducted. Firms expected to participate: EnCana, CNRL, Progress Energy, Shell, Arc Resources, ConocoPhillips Canada, Devon Energy, TAQA.

The second phase of the project will examine emerging technologies based on a scan of existing technology providers as well as a review of Climate Change and Emissions Management Corporation (CCEMC), Sustainable Development Technology Canada (SDTC), and other investments that have been made regarding emergent technologies. From the list of emergent technologies follow up on actual installs and pilot projects will be made.

In both the current and emerging technologies, economic business cases developed on real vendor quote and installation costs (where available) will be developed. A key component will be an examination of the limitations of existing and emerging technologies.

Project deliverables

The deliverables from this project include the following:

1. Final report documenting the current and emerging alternatives, conclusions and recommendations.