

# ALBERTA INNOVATES CLEAN RESOURCES

## ADVANCED HYDROCARBONS

CLEANER HYDROCARBON PRODUCTION – METHANE EMISSIONS REDUCTION

### FUNDING DETAILS

## Zero Emissions Natural Gas Compressor

E3P Technologies, Inc is developing a new class of natural gas compressor based on E3P's patented spherical rotor technology.

Reciprocating compressors are a major source of methane emissions in the upstream natural gas sector.

In this project E3P will engineer, fabricate, deploy and validate a commercial grade natural gas compressor which is capable of the operating conditions of reciprocating compressors but does so without releasing any methane emissions.

Completion of this project is anticipated to allow E3P to immediately commercialize its technology.



#### RECIPIENT:

**E3P Technologies  
Inc.**



#### PARTNERS:

**SDTC, Spartan  
Controls, InUnion  
Technologies**



#### TOTAL BUDGET:

**\$10,727,726**



#### AI FUNDING:

**\$1,875,000**



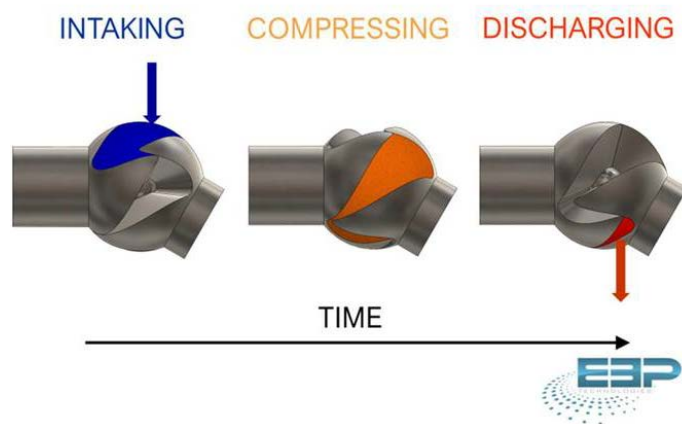
#### PROJECT DATES:

**JAN 2019 –  
JUL 2022**



#### PROJECT TRL:

**Start: 4  
End: 9**



## APPLICATION

The primary initial target market for commercialization for E3P is the 1500-5000 HP range of compressors used for field gathering and plant operations in Western Canada and subsequently various export markets such as the U.S., Australia, China and Russia.



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#### PROJECT GOALS

- The purpose of the demonstration is to validate, in a field setting, the numerous features of E3P’s compressor technology to gas producers and plant operators, as well as to de-risk the buying decision for these expected end users of E3P’s natural gas compressor, which is based on a patented novel spherical rotor.
- Features of E3P’s compressor that will be demonstrated include high speed capabilities, high discharge and differential pressures, as well as a compact and standardized design.
- The demonstration will also highlight and validate E3P’s anticipated methane emissions-free operation whereas conventional reciprocating compressors are a problematic source of methane leakage for producers and operators in the natural gas sector.

#### BENEFITS TO ALBERTA

- Economic diversification for Alberta (there are no natural gas compressor manufacturers in Canada).
- Improvements in Alberta’s emissions reduction efforts (E3P’s compressor will have zero methane emissions vs. that of reciprocating natural gas compressors which leak up to 2000 tonnes of CO2 equivalent per compressor per year).
- Reductions in operating costs for Alberta’s natural gas producers due to the minimal maintenance anticipated with E3P’s compressor.
- Partnerships between various companies involved in the natural gas compressor supply chain such as motor distributors, control providers, separator manufacturers and compressor skid packagers.



4 Patents



1 - 10 Project Jobs



11 – 100 Future Jobs



1 New Product



24.6 kT/yr Future GHGs Reduced

#### CURRENT STATUS

##### July 2020

Critical and extensive intellectual property for E3P’s natural gas compressor has been filed. The compressor design has undergone extensive vetting with sophisticated finite element analysis to confirm component performance criteria and identify any required reengineering and modifications for the compressor prior to proceeding with the fabrication of the commercial field design. Scoping of other required components for the demonstration skid has been largely completed.