ALBERTA INNOVATES

CLEAN RESOURCES

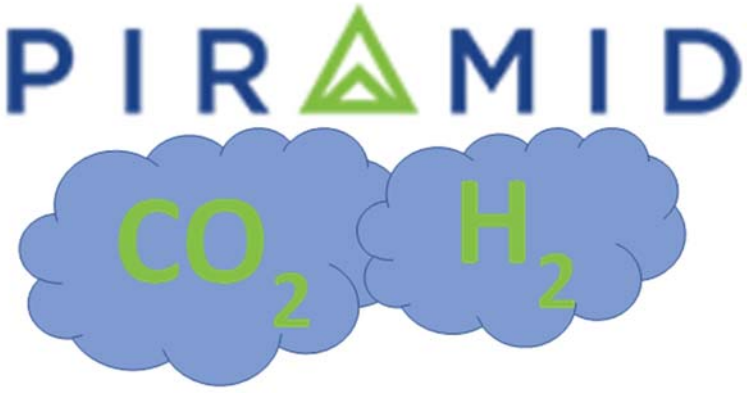
CARBON CAPTURE UTILIZATION AND STORAGE & HYDROGEN

HYDROGEN

FUNDING DETAILS

Risk Software for Pipelines in Hydrogen and Carbon Dioxide Service

Ensuring the safe transportation of hydrogen and carbon dioxide via existing pipeline infrastructure will require a more comprehensive understanding of the associated life safety risks of the pipeline network and how they differ from those associated with natural gas service. The project will focus on modifying and improving C-FER's PIRAMID pipeline risk software to accommodate hydrogen and carbon dioxide service.



RECIPIENT:
C-FER Technologies

PARTNERS:

TOTAL BUDGET:
$130,000

AI FUNDING:
$65,000
DICE

PROJECT DATES:
MAR 2022 – AUG 2023

PROJECT TRL:
Start: 6
End: 9

APPLICATION

Hydrogen is useful as a replacement for diesel in commercial and heavy freight transportation, replacing natural gas for residential and commercial heating, and for industrial processes as a feedstock as it releases no carbon dioxide when used, only water. This software will be applicable for modelling risks on hydrogen and carbon dioxide pipelines.

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PROJECT GOALS

- Develop suitable consequence and probability of failure models to support a quantitative risk-based integrity management framework for hydrogen and carbon dioxide pipelines
- Implement the developed models in PIRAMID, an industry recognized, commercially available pipeline risk analysis software
- Publish technical papers in industry-sponsored international conferences to share learnings within the industry

BENEFITS TO ALBERTA

- Training highly qualified and skilled personnel
- Enable the growth and expansion of hydrogen and carbon dioxide infrastructure in Alberta and other regions
- Enable the development of a low carbon hydrogen economy in Alberta
- Ensure the continued safety of Albertans
- Enables the reduction of greenhouse gas emissions from Alberta industries

1 Project Job

2-5 Future Jobs

5 New Products/Services

1-2 Students Trained

CURRENT STATUS

JUN 2022

Updating model to include hydrogen for jet fire and overpressure and updating model to include carbon dioxide release and dispersion parameters and capabilities.