# ALBERTA INNOVATES

### **CLEAN TECHNOLOGY**

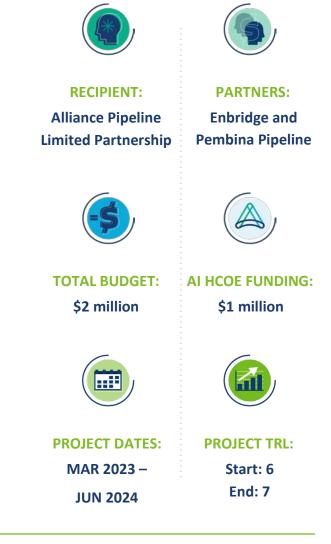
**HYDROGEN** 

### Alliance Pipeline System Hydrogen Blending and Extraction Study

FUNDING DETAILS

Alliance Pipeline's 3,848-kilometre system delivers about 1.6 Bcf/day of liquids rich natural gas from the Western Canadian Sedimentary Basin (approximately 1.0 Bcf/day from Alberta) and the Williston Basin to the Chicago area. This project will study the feasibility of blending hydrogen with natural gas, delivering the blend to Chicago, and recovering the hydrogen for sale. Phase I of the Study will involve a qualitative evaluation of hydrogen extraction technologies. Phase II of the Study will involve an engineering assessment determining whether the pipelines and compressor stations can operate safely and (if so) at what levels of hydrogen-natural gas blends.





#### **APPLICATION**

The Study will examine the opportunity for Alberta to export hydrogen as a blended component in a natural gas pipeline to Chicago. The hydrogen would be separated from the natural gas and sold in the Chicago region.

# ALBERTA INNOVATES

CLEAN TECHNOLOGY

### **PROJECT GOALS**

- Phase I of the Study will involve a qualitative evaluation of hydrogen extraction technologies. Alliance Pipeline will also define the scope of necessary facilities, develop a preliminary equipment list, estimate high-level capital and operating costs, and undertake a qualitative evaluation of potential impacts downstream of the Aux Sable straddle plant, located near Channahon, Illinois.
- Phase II of the Study will involve an engineering assessment determining whether the System's pipelines and compressor stations can operate safely and (if so) at what levels of hydrogen-natural gas blends, including capital and operating estimates for system modifications, as well as a material testing program to support a materials integrity assessment.

### **BENEFITS TO ALBERTA**

- Establishing the feasibility of transporting hydrogen (at a 5% blend, up to a 20% blend) via the System could play a critical role in unlocking Alberta's hydrogen export potential.
- If blending and extraction proves feasible and affordable, the System could help meet growing demand for Albertaproduced clean hydrogen in the U.S. Midwest, creating jobs and economic opportunities in Alberta while lowering North American greenhouse gas emissions.





#### MAR 2023

CURRENT STATUS The project team is reviewing the available technologies for hydrogen extraction.

Disclaimer • Alberta Innovates (AI) and His Majesty the King in right of Alberta make no warranty, express or implied, nor assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained in this publication, nor that use thereof infringe on privately owned rights. The views and opinions of the author expressed herein do not necessarily reflect those of Al or His Majesty the King in right of Alberta. The directors, officers, employees, agents and consultants of Al and the Government of Alberta are exempted, excluded and absolved from all liability for damage or injury, howsoever caused, to any person in connection with or arising out of the use by that person for any purpose of this publication or its contents.