

Pipeline Research Council International

Underground Storage: *Define and Refine for Hydrogen*



LEADING PIPELINE RESEARCH

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PHMSA R&D Forum

December 1, 2021



Pipeline Research
Council International
LEADING PIPELINE RESEARCH

Our Mission

To collaboratively deliver relevant and innovative applied research to continually improve the global energy pipeline systems.

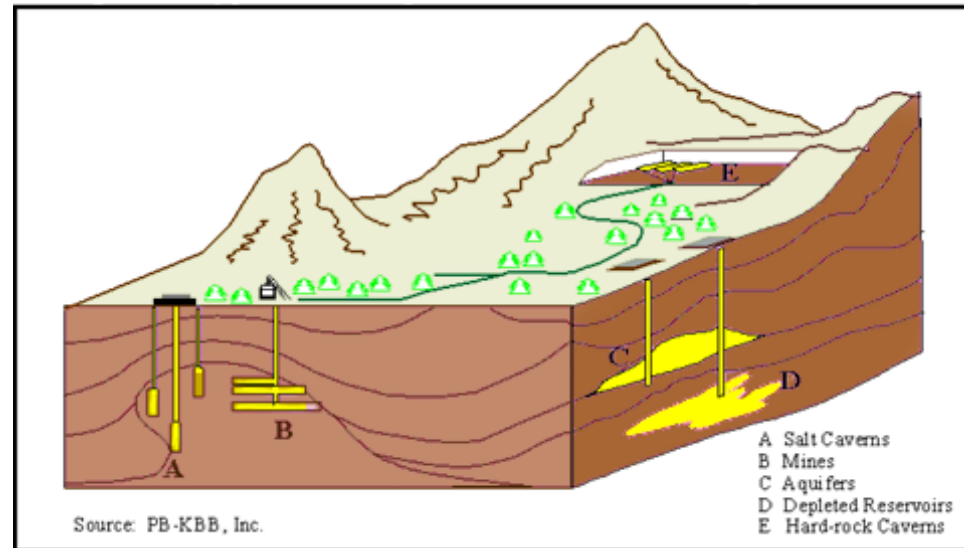
Underground Storage Committee

• Demographics

- 24 Member Companies
- 20 Operators
- North America, Europe, Asia
- Mix of gas and liquid storage

• Storage Variety

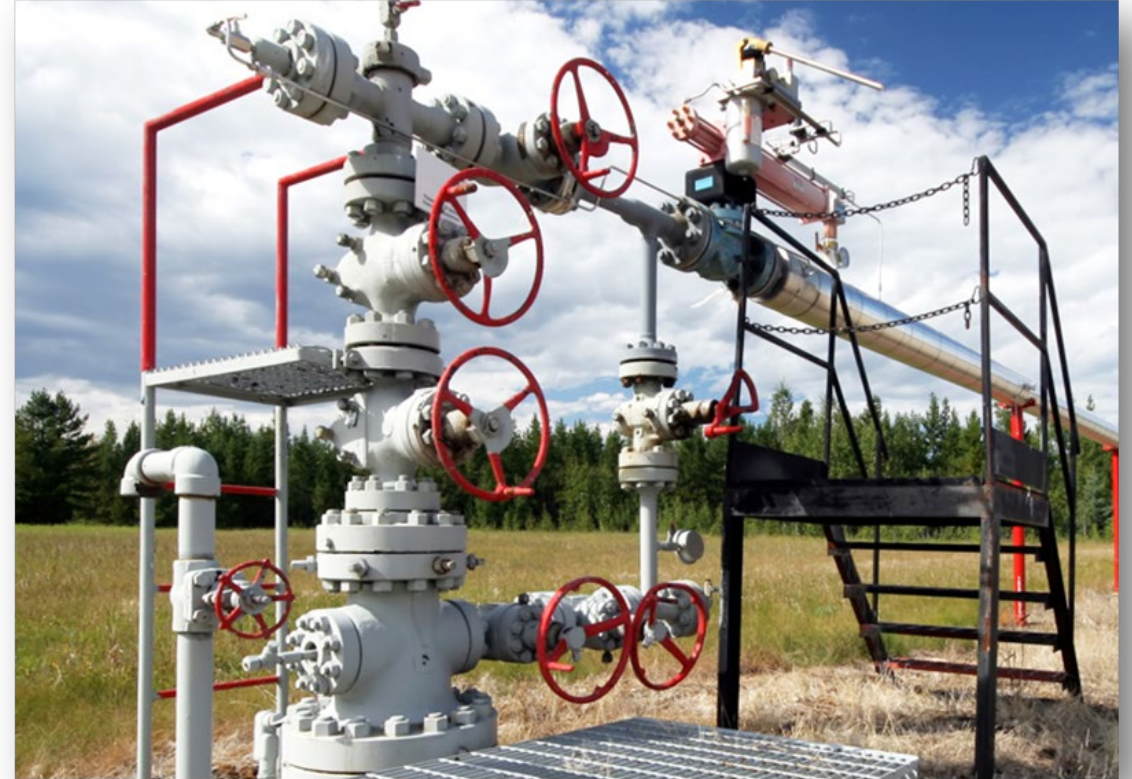
- Reservoir
- Salt Cavern
- Aquifer
- Hard Rock



Background

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- **PRCI Underground Storage Committee Area of High Interest**
- **Global Targets Require Research for Reliable and Safe Operations**
- **Unique Considerations for Underground Storage Types**
- **Strategy for Implementation Needed**



Committee Priorities for Consideration

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• **Storage site**

- Microbial activity and H₂S
- Reduction due to formation issues
- Stratification
- Caprock integrity
- Conversion suitability stage 1
- Capacity / performance

• **Well integrity**

- Suitability for repurpose
- Methodology to assess/test
- Cement
- Conversion suitability stage 2

Materials design/ performance

- Fitness for purpose
- Compatibility issues
- H₂S
- Cement
- Polymers
- Welds (residual stresses)

Project Components



Updated SOTA



Illustrated Roadmap

Scrum Task Board Template
Company name

	To Do	In Progress	Testing	Done
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Prioritized Projects



Summary Report

Project Progress

- **Awarded to C-FER Technologies**
- **Contracted Executed in November**
- **Kick-off meeting scheduled for November 29, 2021**

	2021								2022											
	November			December					January			February			March					
Project Kick-off Meeting																				
Current State-of-the-Art																				
Gap Analysis																				
Road Map																				
Road Map Project List																				
Comprehensive 5-year Strategy																				
Issue Draft Report																				
PRCI Review																				
Issue Final Report																				



Final Deliverable

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Emerging Fuels Institute



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**THANK YOU FOR
JOINING THIS
PRESENTATION**