

Sutter Co. CO2 Capture and Storage Project, Northern California (FE0032239)

Jordan Ciezobka, *Program Manager* 2023 FECM Carbon Management Research Project Review Meetings August 30, 2023



Project Overview

- **Key Objective:** This CarbonSAFE Phase-II project seeks to determine the storage complex feasibility of the central Sacramento basin in northern California to store 50 million metric tons of anthropogenic CO2 from a nearby natural gas combined-cycle power plant.
- Project performance dates: 24 months project, Start Date: TBD (Tentatively October 2023 to September 2025)
- Funding summary: \$9 million DOE, \$2.9 million recipient cost share
- Current Status: Ongoing contract negotiations with NETL/DOE



Project Team



FR NTIER energy















Relevance to DOE CO2 Program Objectives

- The Proposed Project:
 - Enables and supports the rapid, widespread deployment of CCUS to help address the Nation's decarbonization goals.
 - Assesses geologic resources along the pathway of becoming contingent carbon storage resources.
 - Performs research in the form of CarbonSAFE Phase-II feasibility assessments for onshore projects within the U.S.
 - Targets a site having commercial-scale CO2 geological storage in a geographic areas/geologic settings lacking previously supported geologic carbon storage projects.
 - Creates a public engagement plan specifically addressing Diversity, Equity, Inclusion & Accessibility, Justice40 Initiative, Community and Stakeholder Engagement, and Economic Revitalization and Job Creation.



Key Project Activities

- Data collection to supplement key missing geologic and reservoir data (i.e., drilling of a stratigraphic test well within the AOI and associated testing)
- Geologic, Reservoir and Geomechanical Modeling
- Risk Assessment and Mitigation/Monitoring Planning
- CO2 Source and Transport Planning
- Analysis of Contractual and Regulatory Requirements
- Technical and Economic Feasibility Assessment
- Phase-III and UIC Class VI Application Planning and Verification



Expected Outcomes

- Affirmation of Storage Complex Feasibility for 50-million metric tons of CO2 within a 30year time frame
- Clarification of projects risks including mitigation/monitoring planning
- CO2 source and transport planning
- Understating of contractual and regulatory requirements, and assessment of technical and economic feasibility
- Phase-III work plan and UIC Class VI application verification and planning
- Demonstration of storage complex feasibility in a geographic region and a geologic setting not previously achieved



Project Location, Sutter Co. CA



17 miles from Yuba City, 20 miles from Sacramento





Stratigraphy of Sacramento Basin AOI





Area-of-Investigation

- 6x7 mile storage complex AOI ~17 miles from Yuba city
 - -Legacy oil/gas wells
- New stratigraphic well
 - -Logs and cores
- CO2 Source 10 miles SW of Yuba City
 - -NG combined cycle power plant





Community Benefits Plan (CBP)

- Project Team is committed to developing and implementing a Community Benefits Plan which is tailored to the project area and is inclusive of the following:
 - Community and Labor Engagement
 - -Investing in Job Quality and a Skilled Workforce
 - Diversity, Equity, Inclusion, and Accessibility
 - -Justice40 Initiative



Tentative Project Schedule and Tasks

			2023	3				2024									2025								
		Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3		
Task	Description	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1.0	Project Management and Planning		A																						FR
1.1	Integration with Related DOE Initiatives																								
2.0	SCI Assessment and Planning				В																				
2.1	DEIA, Justice 40, Community Engag. Plan				с																				
2.2	Public Engagement				D																				
3.0	Data Collection														E										
3.1	Strat Well Design																								
3.2	Strat Well Permitting																								
3.3	Strat Well Drilling																								
3.4	Strat Well Core Analysis																								
4.0	Geologic and Reservoir Modeling																				F				
4.1	Update Geologic Model																								
4.2	Reservoir Modeling																								
4.3	Geomechanical Modeling																								
5.0	Risk Assessment & Mitigation/Monitoring Planning																	G							
5.1	Risk Assessment																								
5.2	Mitigation/Monitoring Planning																								
6.0	CO2 Source and Transport Planning																						н		
7.0	Analysis of Contractual & Reg. Requirements																						I		
8.0	Technical and Economic Feasibility Assessment																						l		
9.0	Phase III & UIC Class VI Application Planning																								к



Next Steps

- Complete award negotiations and sign contract with DOE
- Commence project activities

Questions



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