REVITALIZATION OF MATURE OIL FIELDS

Opportunities & Challenges of CO_2-EOR

UH Energy
UNIVERSITY OF **HOUSTON**

White Paper | August 2026

About

About the Authors

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Acknowledgements

The authors gratefully acknowledge the speakers and panelists who contributed to the 2026 UH Energy symposium that helped shape this white paper.

We also thank Victor Sharma, research scientist at UH, for his contributions to the development of the economic modeling framework for mature oil field development using CO_2-EOR.

The authors thank Ramanan Krishnamoorti, Vice President, Division of Energy and Innovation at the University of Houston for his contributions to this white paper.

Ramanan Krishnamoorti and Chuck McConnell acknowledge DOE NETL Award Number DEFE0032361 for funding.

Executive Summary

Mature oil fields in the United States, known as brownfields, create an opportunity to increase domestic energy production while supporting carbon reduction objectives. Decades of conventional oil production have provided tremendous value to society; however, there is still a significant amount of recoverable oil trapped in these mature oil fields. Technical and economic constraints can make it hard to recover this trapped oil.

Enhanced oil recovery (EOR), specifically carbon dioxide enhanced oil recovery (CO_2-EOR), has been used in the U.S. for over 50 years as a tertiary recovery technology, allowing for increased oil production in fields previously limited to conventional production methods. But CO_2-EOR can't be used everywhere, and deployment has been limited in part by the amount of CO_2 available through natural sources. That is starting to change with the growing support of carbon capture, utilization, and storage (CCUS) and the increased availability of CO_2 from industrial sources and through direct air capture, creating more opportunities for revitalizing mature oil fields using CO_2-EOR technologies.

To quantify the opportunities associated with CO_2-EOR, industry experts estimated that of the 624 billion barrels of oil initially in place in conventional reservoirs in the United States, around 434 billion barrels of oil remain underground today (including about 20 billion barrels of proven reserves). Of that, approximately 137 billion barrels of oil are technically recoverable by using CO_2-EOR [7]. However, this opportunity is not without risk. Factors such as oil price volatility, policy changes, including those impacting the capture and use of CO_2, legacy well integrity, and long-term monitoring requirements all play a role in determining if a project is both technically and economically feasible.

Utilizing perspectives shared during discussions organized by the University of Houston's Center for Carbon Management in Energy (CCME) and UH Energy, this white paper reviews the opportunities and risks that come with the revitalization of mature oil fields.

Key findings:

- Injected CO_2 works to revitalize mature oil fields by reducing oil viscosity, improving sweep efficiency, and restoring reservoir pressure, resulting in incremental oil production beyond primary and secondary recovery. CO_2-EOR also helps support long-term carbon storage, an increasingly important global objective. This combination can broaden the investment landscape and widen the playing field.
- Revitalizing mature oil fields requires both detailed technical analysis and financial discipline, considering commodity prices, infrastructure costs, and expected production response, along with the cost of capturing and transporting the CO_2, pipeline tariffs, well remediation, and federal tax incentives. CO_2-EOR offers a significant opportunity, but there is no guarantee of financial success.
- Technical assessment and analysis of investment risk includes consideration of the state of existing infrastructure and well integrity, along with an assessment of plugged and abandoned wells on the field. The geologic potential of oil in place and the receptivity of geology to additional CO_2 tertiary stimulation are also critical pieces of the analysis.
- Decades of history involving the storage of millions of tons of CO_2 at fields across the western United States offer evidence that CO_2 can be safely and permanently stored, ascertained through a variety of monitoring methods.

Permanent storage of the CO_2 allows the extracted crude oil to be produced and marketed as nearly net-zero carbon intensity (CI) oil, meeting certain global market demands and increase the future potential of such a product. Carbon intensity is likely to have a significant impact not only on crude oil but also on plastics, steel, cement, and manufactured goods traded on global markets subject to cross-border trade agreements.

Foreword

This work reviews mature oil fields across the U.S. and addresses the role and opportunity of CO_2-EOR in the revitalization of these fields. It is inspired by the analysis and discussions during the CCME-sponsored event "Revitalization of Old Oil Fields: Risks and Rewards" held March 25, 2026, at the University of Houston Sugar Land campus, which brought together industry professionals, policymakers, and researchers from across the United States for discussion and insight on the topic.

This event included two discussion panels, as well as multiple technical presentations on topics related to redeveloping mature oil fields. Speakers and contributors included Susan D. Hovorka, senior research scientist at the Bureau of Economic Geology at the University of Texas Austin; David A. Eyler, founder and general partner of Milagro Resources, LP; Mike Roos, senior vice president and client executive at Marsh McLennan Agency; James Walsh, senior vice president and client executive at Marsh McLennan Agency; Adam Dempsey, partner at Hunton; Scott Wehner, founder of Sovel Group; Steve Melzer, founder of Melzer Consulting; and Steve Guillot, Distinguished Reservoir Engineer, Energy & Environmental Research Center, University of North Dakota. They offered insight on the existing opportunities across the country, CO_2-EOR implementation progress and results, economic and risk analysis, and regulatory requirements and policies related to CO_2-EOR, all of which helped shape the structure and content of this white paper. While this document is not intended to serve as a transcript of the event, it reflects the broader technical dialogue and perspectives shared during those discussions.

UH Energy and CCME have long supported CCUS and CO_2-EOR, while acknowledging that these efforts must balance three key objectives: energy accessibility and reliability, energy affordability, and environmental responsibility, as shown in Figure 1, the Energy Trilemma diagram. Energy sustainability is achieved only when all three pillars coexist.

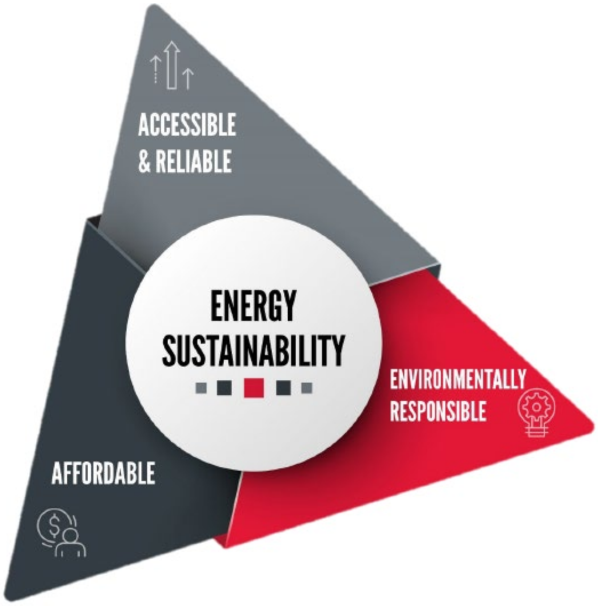

Figure 1. The Energy Trilemma [13]

Introduction

The revitalization of mature oil fields offers a way to meet growing energy demands while also providing energy that is affordable, accessible, and reliable as well as environmentally responsible. Mature fields are often well understood through their history of geologic assessments and production, and have provided accessible and reliable energy through decades of operation. With proper field development planning, the use of CO_2-EOR could boost production of affordable and environmentally friendly hydrocarbon energy, reducing carbon emissions by securely storing CO_2 in the subsurface. The following sections of this paper provide a detailed analysis of the nationwide opportunities for mature oil field revitalization; the success of existing CO_2-EOR operations; and the risks, remediation, and long-term responsibility that come with the operation, as well as economic insights for investment plans.

With proper field development planning, the use of CO_2-EOR could boost production of affordable and environmentally friendly hydrocarbon energy while reducing carbon emissions.

Opportunities for Mature Oil Field Revitalization

Mature oil fields in the U.S. offer great opportunities for CO_2-EOR operations as a large amount of oil remains underground after primary and secondary recovery. Primary recovery relies heavily on the initial reservoir pressure and the ability of the hydrocarbons to flow from the reservoir to and through production wells. Early oil field development efforts resulted in recovery of only 5% to 10% of the original oil in place (OOIP) before the field was abandoned, generally due to technical limitations and economic conditions. Modern primary recovery from conventional oil fields has boosted that to an average recovery factor of about 30% OOIP. Secondary recovery efforts such as waterflooding can increase that by another 10–20% due to the pressure maintenance and improved sweep efficiency of the operation [7]. However, a large amount of oil still remains in these mature oil fields even after secondary recovery operations. Industry experts provide an estimate of different categories of U.S. oil reserves. This is captured in Table 1, which shows that out of the 624 billion barrels (BBls) of original oil in place for conventional U.S. oil reservoirs, around 190 billion barrels of oil have been produced, while another 20 billion barrels are classified as proved reserves. This leaves approximately 414 billion barrels of remaining oil underground, and out of that amount, around 137 billion barrels are technically recoverable via CO_2-EOR [7].

OIL RESOURCE	ESTIMATION
Original oil in place (OOIP)	624 billion Barrels
Proved reserves	20 billion Barrels
Cumulative production	190 billion Barrels
Remaining oil in place	414 billion Barrels
Resource technically favorable for CO_2-EOR	284 billion Barrels
Technically recoverable resource	137 billion Barrels

Table 1. Domestic oil resources favorable for CO_2-EOR applications [7]

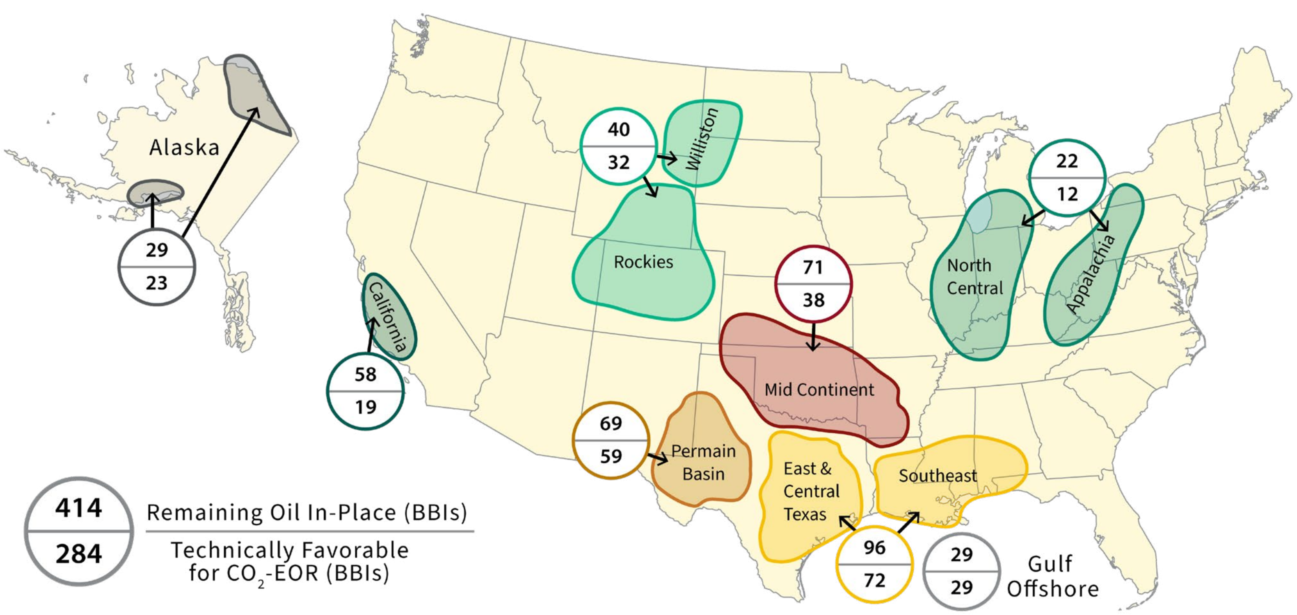

Figure 2. Domestic oil resources favorable for CO_2-EOR applications [7]

Figure 2 shows the location of domestic oil resources that have the potential for mature field redevelopment, as well as the amount of oil for each region that is technically favorable for CO_2-EOR applications [7]. Texas and the Gulf Coast regions, including the offshore Gulf of America (Gulf of Mexico), combined contain over half of the resources nationwide that are considered technically favorable for CO_2-EOR.

This indicates that with proper project planning and implementation, Texas and the Gulf Coast are well positioned to lead CO_2-EOR–based mature oil field redevelopment efforts in the United States.

Success in Existing CO_2-EOR Projects

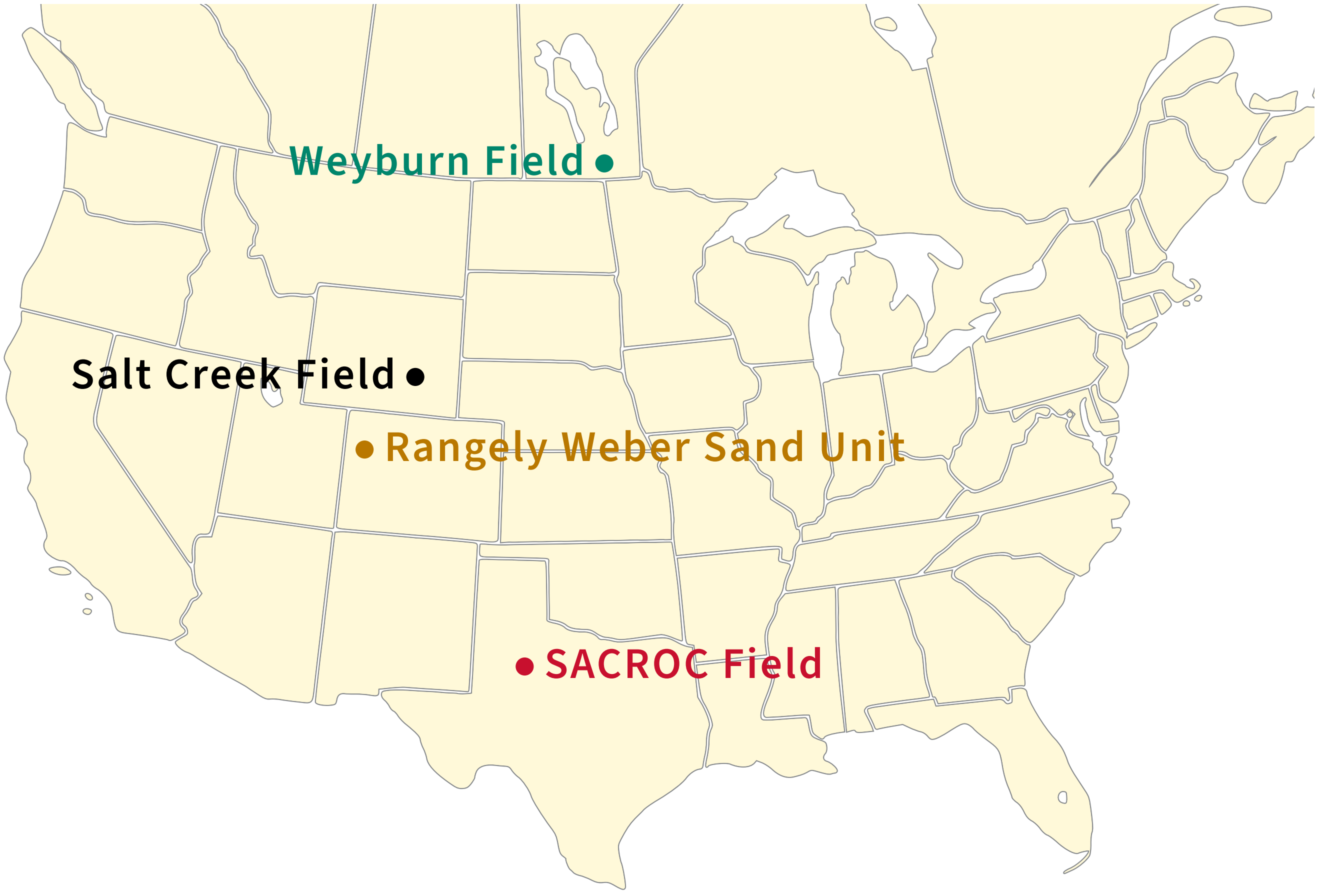

Figure 3. Locations of selected CO_2 EOR fields [1][3][6][16], including SACROC in Texas, Rangely Weber Sand in Colorado, Salt Creek in Wyoming, and Weyburn in Saskatchewan (Canada).

Lessons learned from past successful CO_2-EOR projects offer critical guidance for future projects. The map in Figure 3 shows the location of several aging oil fields that were revitalized using CO_2-EOR. Each of the four has demonstrated secure CO_2 storage over decades of operation while generating revenue from increased oil production.

> Existing knowledge of field infrastructure and reservoir properties are key to the success of revitalization projects.

Early Commercial CO_2-EOR Projects

The SACROC project in West Texas was begun in 1974 and has so far recorded the permanent underground storage of more than 75 million metric tons of CO_2. The Rangely Weber Sand Unit in Colorado has permanently stored an additional 22 million metric tons of CO_2 since the project was begun in 1986.

Active monitoring has shown minimal CO_2 leakage through wellbores and formations at the two projects, providing evidence that secure long-term CO_2 storage in legacy oil fields is possible. Both projects also suggest that existing knowledge of field infrastructure and reservoir properties are key to success with revitalization projects.

More Recent CO_2-EOR projects

Other projects are more recent but provide additional examples of successfully boosting oil production while permanently storing carbon dioxide. The Weyburn field project in Saskatchewan, Canada, has stored more than 30 million metric tons of CO_2 since it was initiated in 2001, with no leaks reported.

The Salt Creek field in Wyoming was on the verge of depletion when redevelopment began there in 1999; tertiary CO_2 flooding started five years later. The project required substantial investment, including building a 125-mile CO_2 pipeline to connect to industrial sources of CO_2; evaluating the integrity of more than 1,000 wells across the field; identifying undocumented wellbores; and rebuilding surface facilities. It has since produced over 56 million barrels of incremental oil, stored over 32 million metric tons of CO_2 cumulatively [12], and generated over $800 million in state revenue [7].

The success of these projects didn't happen by chance. Operators combined careful scrutiny of reservoir characteristics – including permeability, porosity, rock and fluid properties, reservoir continuity and pressure conditions – with an examination of legacy infrastructure in order to determine the technical feasibility. Beyond that, these projects show the importance of having a reliable source of CO_2 and a consistent investment plan.

Risk Management, Remediation, and Long-Term Responsibilities

Although CO_2-EOR projects can help revitalize mature oil fields, generate revenue from incremental oil production, and help meet carbon emissions targets, they also involve risks.

This section addresses some of the common risks associated with these projects, the mitigation and remediation of these risks, and long-term responsibilities including insurance and liability that continue throughout the lifespan of the project.

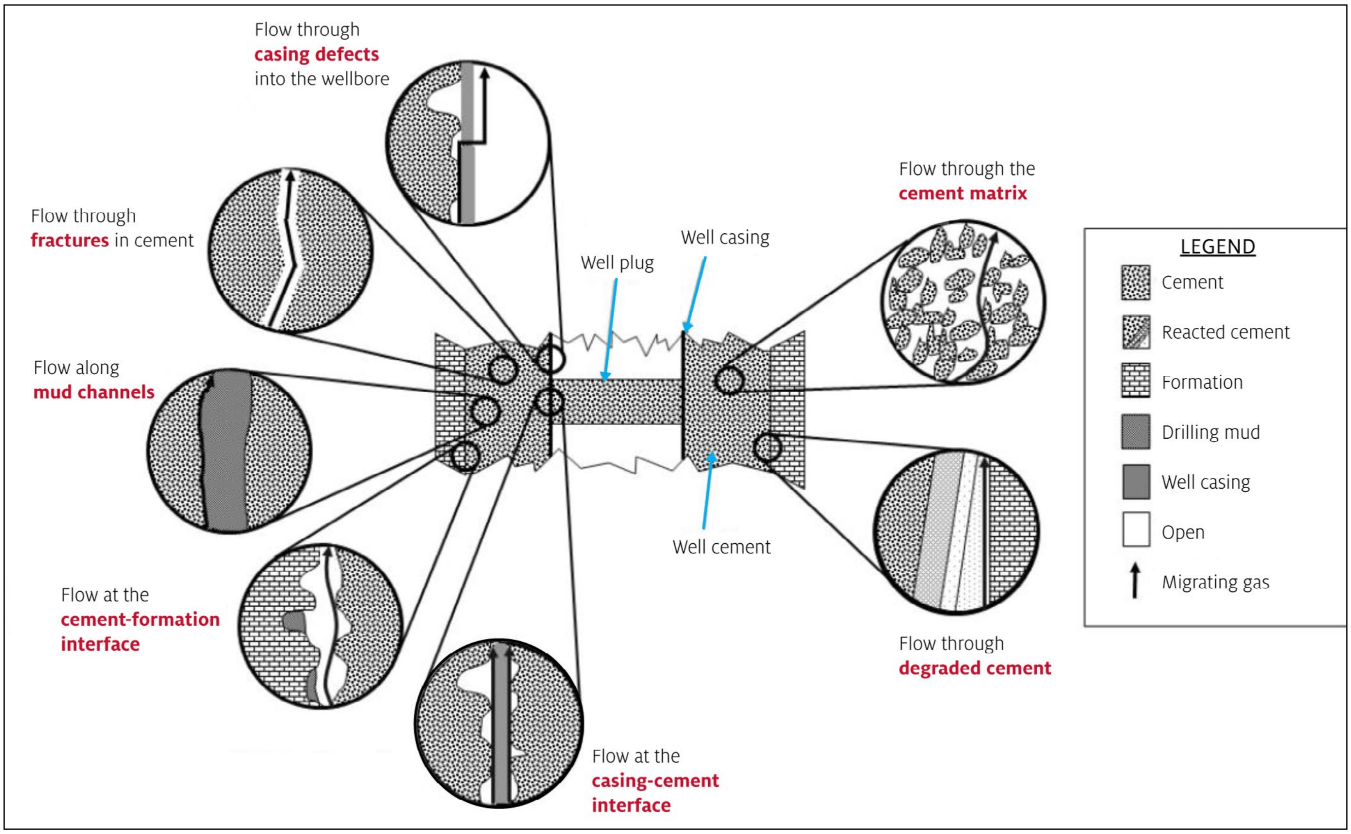

Figure 4. Potential leakage pathways associated with cement integrity [4]

Well Integrity

Well integrity is a key factor influencing the success of mature oil field revitalization, since man-made wellbores can create leakage pathways for CO_2 and compromise project performance and the containment of CO_2.

Legacy wells drilled while the oil fields were first developed carry a significant risk of leakage because of the types of cement used to case the wells as well as improper plugging of abandoned wells. In 2007, Watson and Bachu conducted a data-mining study evaluating the potential leakage from legacy wells in an area where CO_2 storage was intended. Of the 316,439 wells evaluated in the province of Alberta, Canada, 4.6% showed leakage risk [15] due to low annular cement top, external corrosion, casing failure, and wellbore leakage. Separately, abandoned wells that have been improperly plugged also create pathways for CO_2 to leak. To reduce these risks associated with legacy wells, common practices involve identifying undocumented or orphaned wells, re-plugging wells that do not meet current standards, and inspecting well casing and cement using logs and pressure tests.

Cement integrity is another critical element of overall well integrity and requires additional attention. Cement is a key component in drilling and completion practices, and it is injected into the annulus between the casing and the surrounding formation. When the cement hardens, it helps isolate the reservoir from other formations and groundwater layers. However, cement degradation can occur during the field redevelopment process. Injected CO_2 can mix with groundwater or formation water to form carbonic acid, which can then react with the standard Portland cement to create a porous silica zone that can widen the existing micro-annuli and weaken the hydraulic seal as described in the Appendix. Figure 4 shows the potential leakage pathways associated with cement integrity.

Legacy wells were drilled and completed based on older standards that don't meet today's stricter requirements, leading to additional uncertainty about the cement's condition. That makes it important to evaluate the quality of the cement bond, the cement compressive strength, and its resistance when it comes in contact with CO_2 in order to avoid creating pathways for leaks. Tools such as cement bond logs can be used to evaluate the condition of the cement; when a problem occurs, squeeze cementing, CO_2-resistant cement, or special additives can be used for remediation to reduce the risk of leaks.

Pressure Management

Assessing the geology and making the needed updates and improvements to infrastructure is required to prepare a field for a successful CO_2-EOR project. Once operations begin, pressure monitoring and management – involving both injection pressure and reservoir pressure – are critical elements required to safely contain the CO_2 and prevent blowouts.

That's a balancing act. Injection pressure must be above the minimum miscible pressure (MMP) to allow the CO_2 to efficiently sweep the oil from the reservoir, but it has to remain below the fracture pressure in order to avoid fracturing the rock. Reservoir pressure must be lower than the initial reservoir pressure to ensure the integrity of the caprock.

Reservoir pressure, injection well pressure, and pressure in surrounding wells must all be closely monitored during the injection phase in order to reduce the risk of unintended fluid movement.

Long-Term Responsibilities

It is critically important to continue oversight, measuring, and monitoring throughout the life of the project as well as after the life of the project. Operators need to use a measurement, monitoring, and verification (MMV) process to demonstrate that the CO_2 used in oil recovery has been securely contained in the subsurface and that the subsurface plume does not migrate to potentially challenging areas where it might pose a threat. This process can also determine if the reservoir and well conditions are performing as expected and may involve tracking injected and recycled CO_2, along with soil and groundwater sampling.

Operators are required to evaluate wells before CO_2 flooding begins, relying on historical data, pressure tests, and surveys to identify undocumented orphan wells and repair or re-plug high-risk wells. Smart policy can help with this process. In Texas, Senate Bill 1146 allows operators in good standing to plug orphan wells without taking on the well's historical liability; this also helps address risks associated with legacy wells that could delay a redevelopment project.

Insurance carriers such as Marsh McLennan and 45Q tax certifiers require clear plans for risk management and monitoring. Some of these management and monitoring methods are described in the Appendix.

All of these requirements are part of responsible project development, although they also raise the cost of development. The next section discusses how project economics affect the overall viability of CO_2-EOR projects.

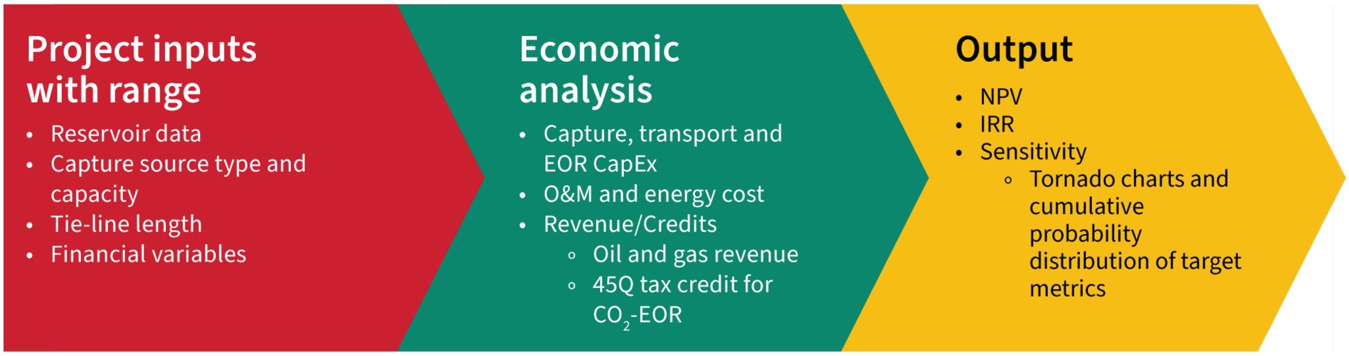

Figure 5. Economic model structure for integrated CO_2-EOR operations [2]

Economic Modeling and CO_2-EOR Project Feasibility

After a project is determined to be technically feasible, economics dictates whether an investment makes financial sense. The economic feasibility of a CO_2-EOR project depends on the combined performance of all associated elements: costs associated with capture, transportation, field redevelopment, operations, MMV, and tax incentives all influence overall project economics. This is why UH CCME strongly encourages a detailed economic analysis to be performed for any mature oil field revitalization plan using CO_2-EOR.

As a part of ongoing economic modeling efforts, Victor Sharma, research scientist at the University of Houston, has led the development of a comprehensive framework for evaluating the economics associated with CO_2-EOR projects. Work on the model continues for future publication in a scholarly journal; however, the current outcomes provide useful insights in terms of risks and sensitivity analysis for CO_2-EOR project development. The economic model is also used in the newly launched UH Energy CCUS-EOR micro-credentialing course.

The economic model workflow structure is shown in Figure 5, which serves as a cost estimator tool to determine the economic feasibility of CO_2-EOR projects, with the assumption that the source of the captured CO_2 comes from the Houston area, with the Permian Basin as the EOR sink. The model integrates reservoir information with project capital and operating costs, and provides results, including the project NPV, or net present value, as well as sensitivity analyses on factors influencing the project economics.

Figure 6 shows how the discounted cash flow is calculated, which accounts for the initial revenue from oil and gas sales minus operating costs, taxes, capital investment, and earnings through tax incentives. NPV of the entire project is then calculated based on the discounted cash flow for the operational period [10].

The NPV of a CO_2-EOR project directly demonstrates its overall value. The tornado chart in Figure 7 shows how NPV is influenced by key variables associated with a given project. Some key variables include oil price, oil productivity, the 45Q tax credit value, the CO_2 capture capacity, and electricity prices. The sensitivity analysis shows that oil price and oil productivity have the greatest influence on the project NPV, while other factors such as the 45Q tax credit and the capacity factor also influence the economic performance of the project. Factors like CO_2 transportation cost are much less significant compared to a decrease in production or a low oil price. This confirms that a CO_2-EOR project is highly dependent on the revenue from incremental oil production, as well as the ability to maintain a high utilization rate for CO_2 capture, processing, and transportation infrastructure.

While the sensitivity analysis in Figure 7 helps identify the individual effects of key variables on NPV, a Monte Carlo analysis, shown in Figure 8, is helpful for identifying uncertainty and can generate a range of possible outcomes rather than a single deterministic result. The uncertainty analysis shows that the cumulative discounted cash flow can remain negative for a large portion of the entire project life, and depending on different situations, the economic breakeven time can be very different.

Figure 9 shows the probability distribution of CO_2-EOR project NPV. The graph shows that NPV is negative $1.4

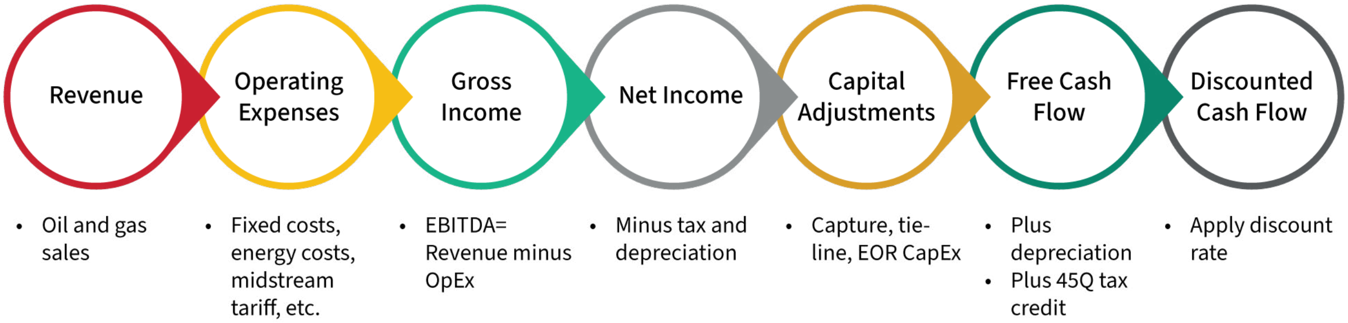

Figure 6. Discounted cash flow structure of CO_2-EOR projects [2]

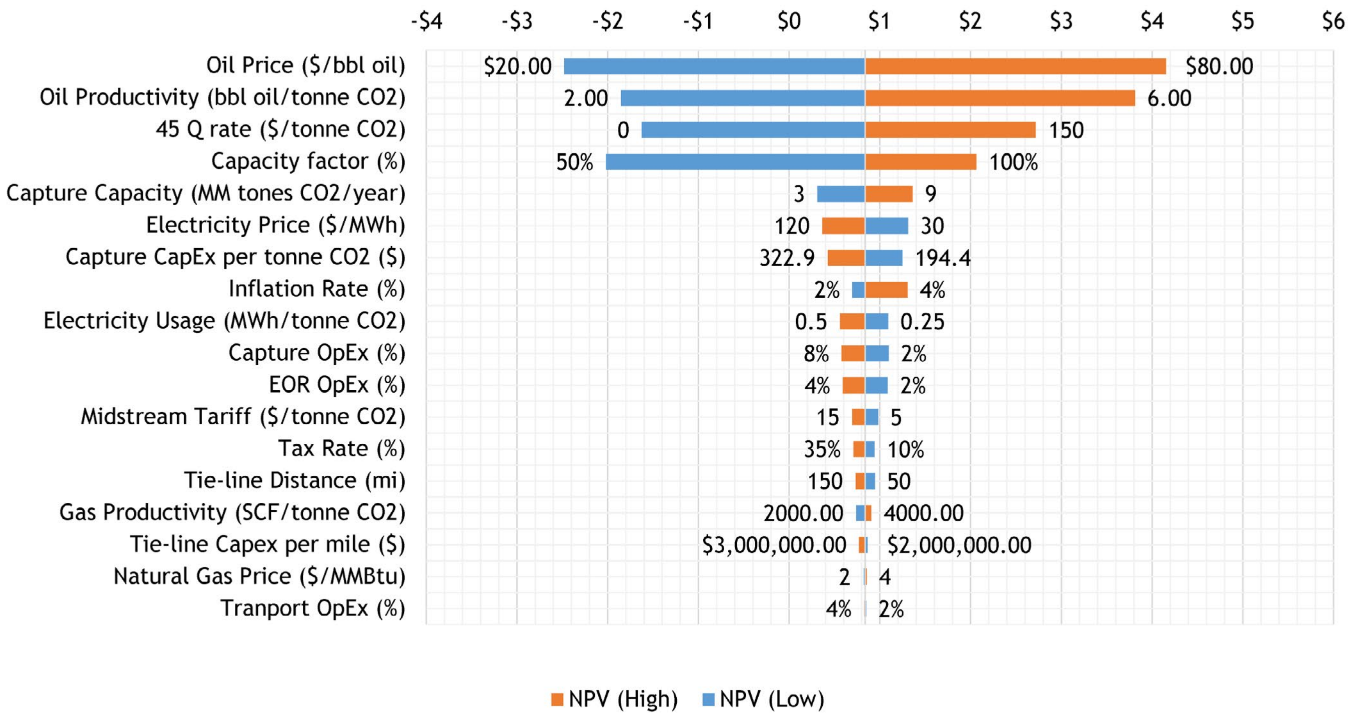

Figure 7. Sensitivity of CO_2 EOR project NPV to key variables of interest [2]

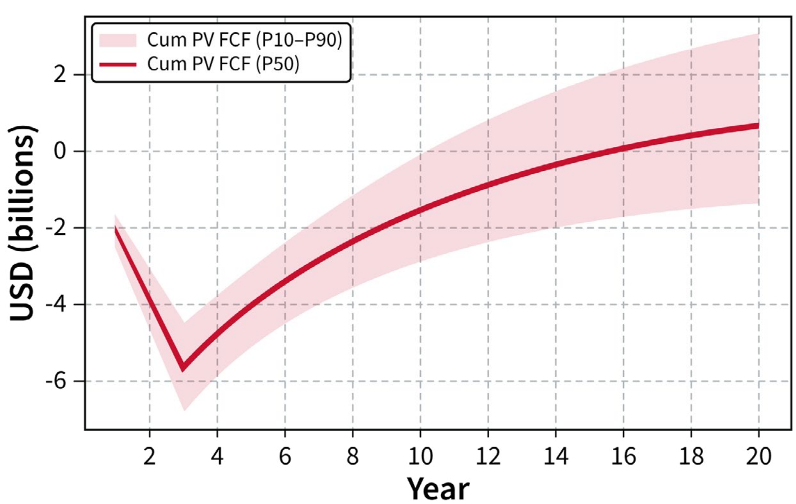

Figure 8. Cumulative discounted cash flow uncertainty for CO_2-EOR project economics [2].

Note: The Monte Carlo analysis uses truncated normal distributions for the selected input parameters, bounded by the specified lower and upper limits and centered on the mean values: oil price ($20–80/bbl; mean $50/bbl), oil productivity (2–6 bbl oil/tonne CO_2; mean 3.9), 45Q credit ($0–150/tonne CO_2; mean $85/tonne), capacity factor (0.5–1.0; mean 0.85), CO_2 capture capacity (3–9 MM tonnes/year; mean 6), electricity price ($30–120/MWh; mean $75/MWh), and capture capital cost ($194.4–322.9/tonne CO_2; mean $258.65/tonne). The shaded area represents the P10–P90 range, and the solid line represents the P50 case.

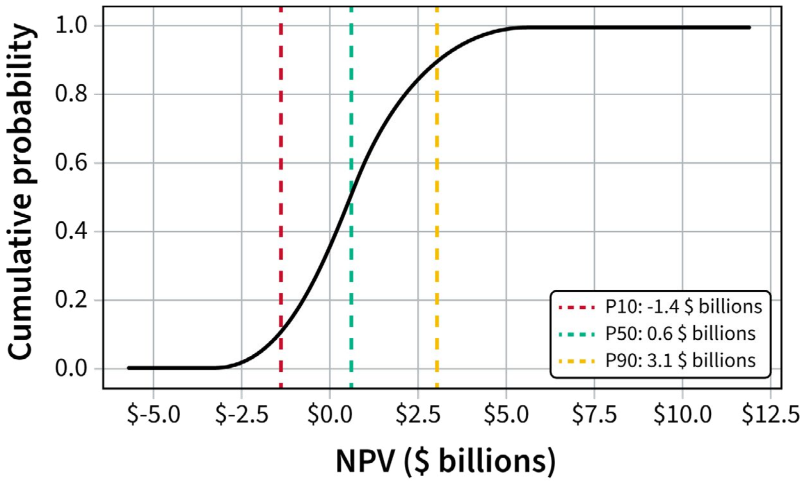

Figure 9. Probability distribution of CO_2-EOR project NPV [2]

> Beyond technical analysis, a rigorous economic model is required for a successful CO_2-EOR operation in a mature oil field.

billion at P10, $0.6 billion at P50, and $3.1 billion at P90. Although the median NPV is positive, there is roughly a 30% possibility that the project will have a negative NPV. This is important information for project developers to consider, because even if a project is evaluated as having a high possibility of yielding positive NPV, it may still suffer when the price of oil drops or when production declines.

The economic model illustrates that beyond technical analysis, a rigorous economic model is required for a successful CO_2-EOR operation in a mature oil field. Although CO_2-EOR offers great opportunities for revitalizing mature oil fields, project success is not guaranteed. Projects need to be screened carefully, and key uncertainties taken into account in investment planning. The best projects are those where reservoir performance, CO_2 supply, infrastructure, policy support, and long-term risk management are all strong enough to make the project both technically and economically feasible.

Observations and Future Outlook

The revitalization of old oil fields using CO_2-EOR technologies can help meet increasing energy demand while addressing goals to reduce carbon emissions. Success with CO_2-EOR projects such as the Salt Creek and SACROC projects demonstrates that for mature oil fields that are well understood in terms of reservoir properties, production history, and existing infrastructure, redevelopment is often a better choice compared to new greenfield development due to the lower cost and associated risks. In cases where there is existing infrastructure in place and reliable sources of available CO_2, the economics can be immediately compelling. This "low-hanging fruit" is where significant advancements can be made. These projects are key to scaling CCUS and EOR and may represent some of the most achievable opportunities in the near future.

However, there are also risks that come with mature oil field redevelopment. Legacy well assessment and remediation, rebuilding of existing infrastructure, as well as insurance and MMV costs all require substantial capital investment. Operators must incorporate these elements in their project economics, which will largely depend on revenue from incremental oil production as well as the 45Q tax credit. For greenfield developments, the costs, technical challenges, and accessibility of CO_2 sources are also critical to the analysis.

Revitalization of old oil fields is about more than just enhancing oil recovery. It provides an opportunity to use and modernize existing infrastructure to increase domestic energy supply while reducing carbon emissions. The keys to a successful redevelopment project involve favorable technical feasibility, the project economics, and policy support.

For mature oil fields where existing infrastructure and reliable sources of available CO_2 are already in place, the economics can be immediately compelling. These projects are key to scaling CCUS and EOR.

Appendix

CO_2 Sequestration in Legacy Oil Wells: Well Integrity

Overview and Importance

In September 2024, Archer-Daniels-Midland (ADM) paused work at its CO_2 injection well at the Decatur, IL, storage facility after tests revealed a potential fluid leak. The news prompted advocacy and environmental groups to question the safety of CCUS projects.

Many older oil wells are being considered for carbon sequestration projects as they present an opportunity to reuse existing infrastructure. However, as these legacy wells were not originally designed for long-term CO_2 storage, it is critical to ensure that they can safely contain injected CO_2 over time. This makes their proper maintenance, reliable sealing, and continuous monitoring essential.

Well integrity is maintained using technical, operational, and organizational solutions, which keep the well fluids from leaking. In CO_2 sequestration and CO_2 – EOR projects, where the goal is the permanent storage of CO_2, maintaining a hydraulic seal is vital to avoid blowouts, and ensure the injected CO_2 remains securely trapped over the well's life.

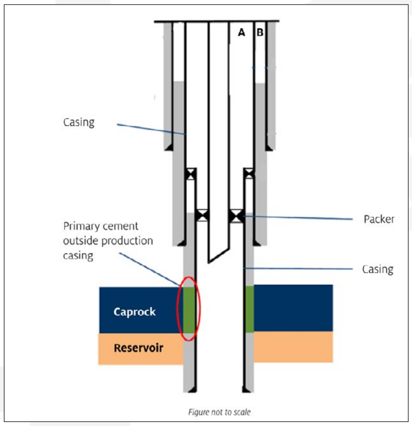

Fig 1: Wellbore cement and casing

CO_2–Cement Interactions and Degradation

When CO_2 mixes with water in the underground reservoir, it forms carbonic acid. This acid interacts with the wellbore cement (especially Portland cements), through a sequence of chemical reactions:

- Stage 1: Dissolution – Portlandite within the cement dissolves, initially reducing the cement's porosity and maybe even increasing its strength.
- Stage 2: Carbonation – The dissolved portlandite reacts with carbonic acid and precipitates as calcium carbonate.
- Stage 3: Bicarbonation and Leaching – The calcium carbonate eventually dissolves in a bicarbonation process, leaving behind an amorphous, porous silica zone.

Impact: The cement becomes permeable and prone to developing tiny cracks, ultimately compromising well integrity.

Potential Wellbore Leakage Pathways

Fluids in the well can leak through weakness in the wellbore structure:

- Fractures within the cement itself or through a degraded cement matrix.
- Flow along mud channels left behind during primary cementing.
- Micro-annuli at the cement-formation interface or the casing–cement interface.
- Direct flow through casing defects, washouts, or failures at the well plug.

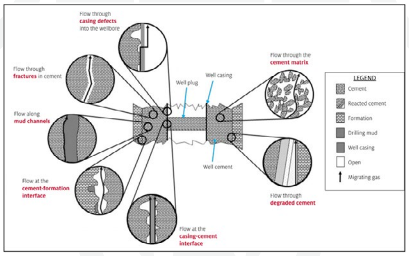

Fig 2: Leakage pathways at wellbore

Portland cement, or any type of modified recipe, must ensure long-term permanence and diligent monitoring must be deployed. This will make certain that defects are identified and resulting mitigation remedies any potential leakage.

Mitigation Strategies and Best Practices

Specialized materials and practices are used in the CO_2-rich environment of wells to prevent corrosion:

- Advanced Formulations: Cements mixed with expanding agents and engineered pozzolans (such as artificial fly ash or natural volcanic ash) have lower permeability and better sealing capability.
- Alternative Materials: High-temperature durable epoxies are used in Class VI CO_2 injection wells.
- Risk Reduction: Using appropriate casing vs. bit size, achieving a sufficient cement bond, and ensuring adequate cement thickness extending through the reservoir's caprock minimize risk.

Measurement, Monitoring, and Verification (MMV)

Continuous long-term monitoring of downhole cement integrity is required to detect anomalies and prevent catastrophic failure.

Cement Bond Logging (CBL): Assesses quality of the primary cement job, detects poor cement coupling, and monitors for degradation over time.

- Fiber Optics: Distributed Acoustic Sensing (DAS) and Distributed Temperature Sensing (DTS) lines in the wellbore track acoustic/strain variations and temperature anomalies in real-time to find leakage.
- Other Methods: Pressure testing, microseismic data, and quasi-distributed pressure sensing (DPS) are also vital for overall integrity mapping.

Real-World Field Examples

SACROC (Permian): The Well Integrity Assessment Report from the Peterhead CCS Project highlights that Portland cement can remain viable in CO_2-rich environments for decades, effectively preventing CO_2 migration from reservoirs.

Sleipner (Norway): In the longest-running offshore CO_2 storage project, Class G Portland cement used has undergone carbonation; however, this has actually plugged the pores and reduced permeability, keeping the CO_2 plume safely trapped, as verified by 4D seismic monitoring.

ADM Decatur (Illinois): Standard Portland-based cement with high-performance additives was used. In 2024 a leak was detected in a deep monitoring well, a result of the well completions being corroded. Over time, the multi-zone sampling system installed inside the well failed to operate correctly allowing fluids to migrate from the perforated zone in the injection interval to another zone above the confining zone.

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Notes

About UH Energy

UH Energy is the University of Houston's signature energy initiative, integrating research, education, industry engagement and innovation to address the most pressing energy challenges of the 21st century.

Located in the energy capital of the world, UH leverages multidisciplinary expertise across engineering, science, business, law and public policy to develop reliable, affordable, resilient and sustainable energy solutions. UH Energy brings together UH's energy-related talent and resources to produce a highly skilled workforce and strategic leadership for the evolving sector.

It is recognized for research breakthroughs and technological innovations that drive today's energy industry. This integrated approach spans the full energy system spectrum – from traditional hydrocarbons to renewables and emerging technologies – all guided by UH's role as The Energy University®.

About CCME

The Center for Carbon Management in Energy (CCME), addresses the challenge of carbon emissions to support a sustainable energy future and healthier communities. Focused on emissions rather than fuels, CCME develops science-based, data-driven strategies to measure, reduce, and manage emissions across the energy value chain. Working with industry partners, the Center transforms research into real-world solutions for oil and gas, petrochemicals, electric power, and renewable energy sectors. Leveraging expertise in engineering, science, business, law, and policy, CCME is uniquely situated in Houston to drive innovative and practical pathways to a lower-carbon future.

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