



FOSS & COMPANY
TAX CREDIT SPECIALISTS
Since 1983

CONFIDENTIAL

*Carbon Capture Utilization &
Sequestration (CCUS)*

*Dawn Lima – Associate VP, Renewable Energy &
Sustainable Technologies*

June 2023

FOSS & COMPANY OVERVIEW

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Foss & Company (“Foss”) is a national institutional investment management firm founded in 1983. Since inception, Foss has specialized in the financing of projects which generate tax credits, such as the 45Q carbon sequestration tax credit. Foss has deployed over \$8 billion in cash equity from national insurance companies and corporations through investments in tax credit products.

Foss is committed to, through its Renewable Energy and Sustainable Technologies group, preserving and improving our environment. Over the past several years we have been expanding our role as a financing resource for renewable energy projects to include partnering with well-established developers of carbon capture facilities in order to reduce the amount of CO₂ emitted into the atmosphere from anthropogenic sources.

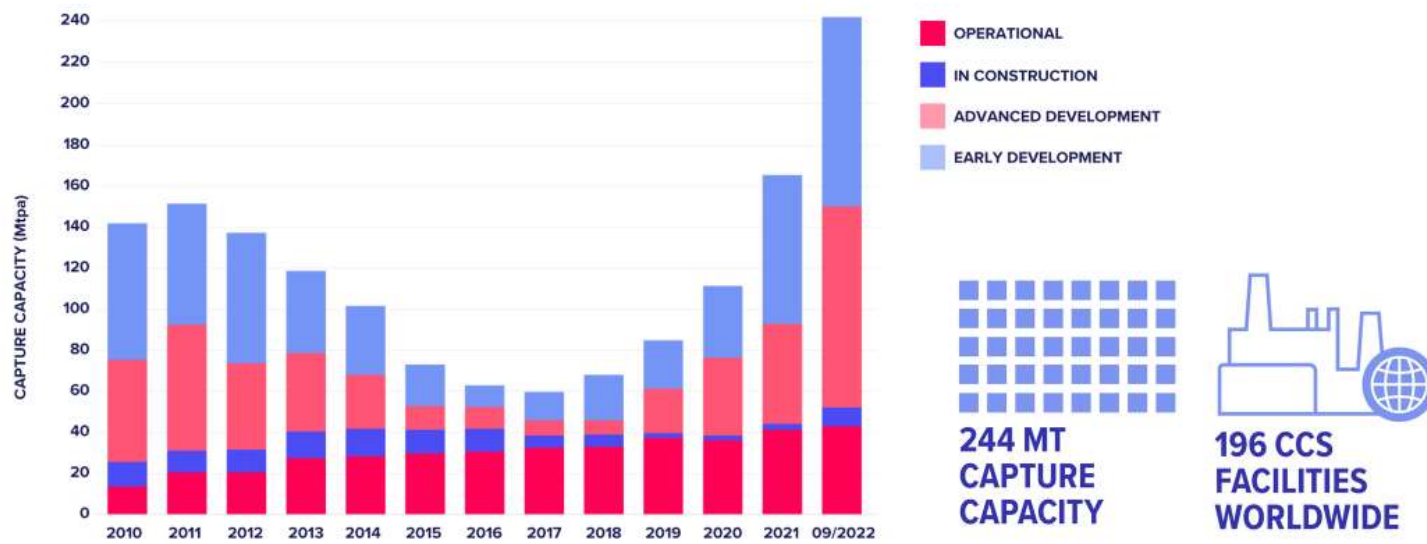
Foss possesses a full spectrum of capabilities including project development, assisting developers with tax equity syndication, financial modeling, ongoing accounting and investor reporting and more. Foss continues to aggressively pursue carbon capture and sequestration opportunities throughout the United States.



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GLOBAL STATUS CCUS 2022

GROWTH IN 2022



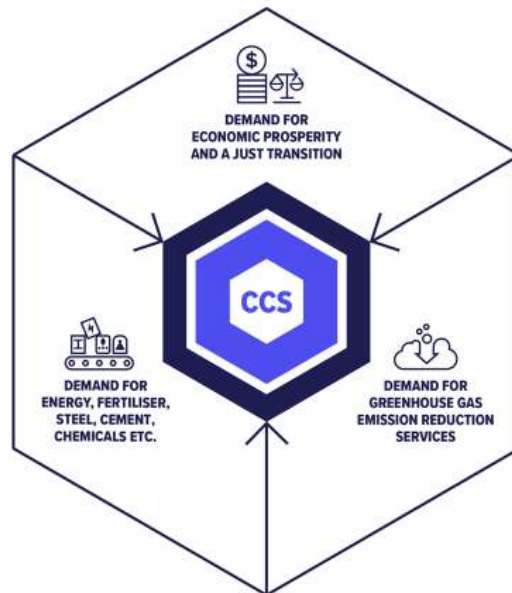
CCUS – THE TIME IS NOW



*Safe and Effective storage:
The pieces Have come together*

Barriers (2003) Obstacles (2009) Challenges (2011) Successes (2015) Deployment (2017) Community Impacts (2021)

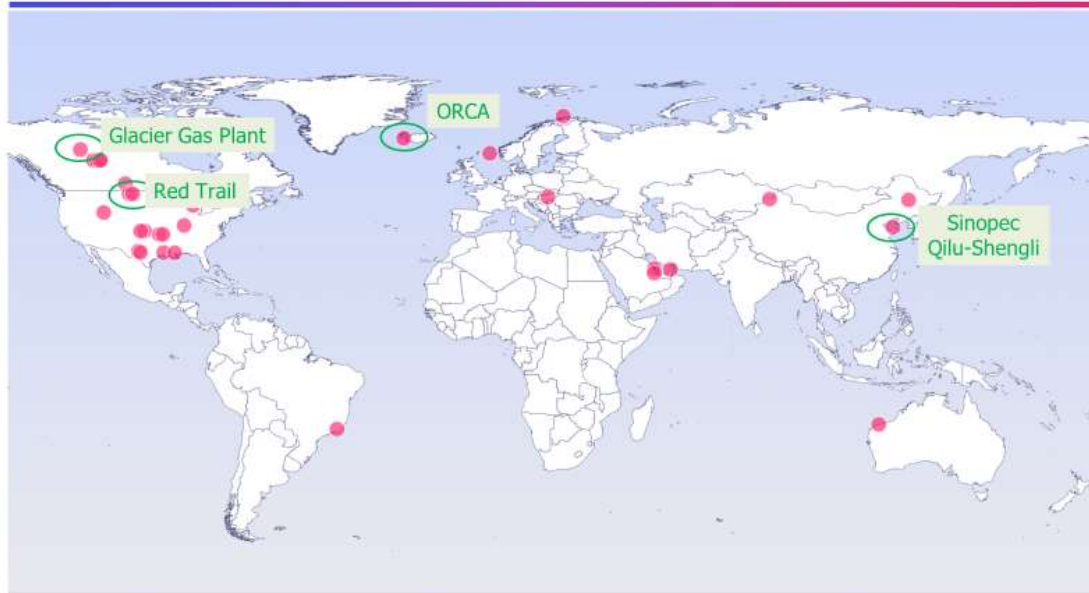
THE DEMAND DRIVERS FOR CCS



Demand for CCS is being driven by:

- Net-zero commitments from governments and businesses driving emission reductions and removals.
- Need for low-carbon footprint commodities and energy.
- Economic drivers including growth, prosperity and a just transition.

CCS FACILITIES – OPERATING



● Operational

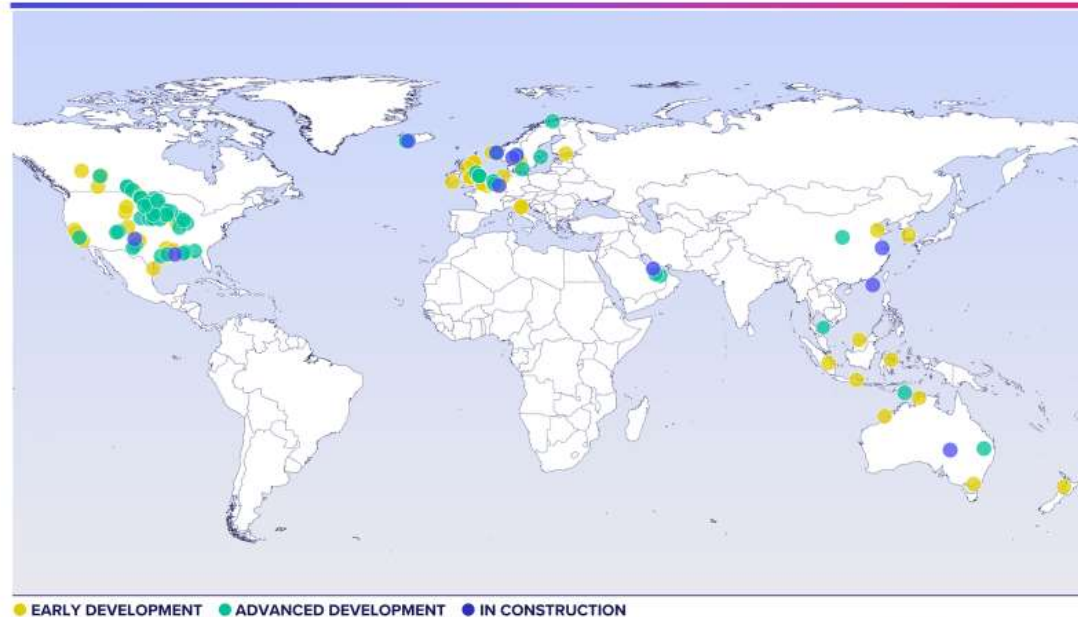


**30 CCS FACILITIES
OPERATIONAL**



**20+ COUNTRIES WITH
COMMERCIAL CCS &
DACCS FACILITIES
IN OPERATION OR UNDER DEVELOPMENT**

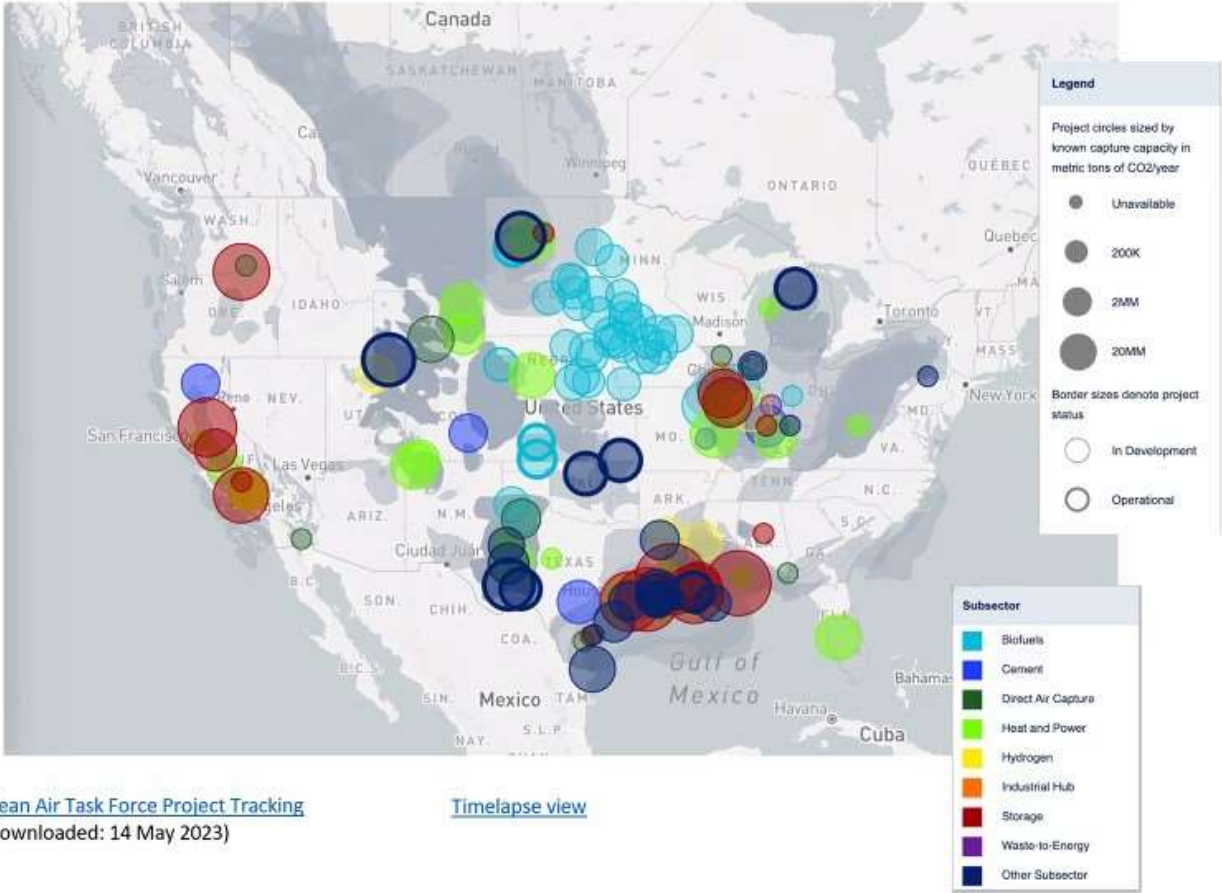
CCS FACILITIES – IN DEVELOPMENT



Key Figures for 2022

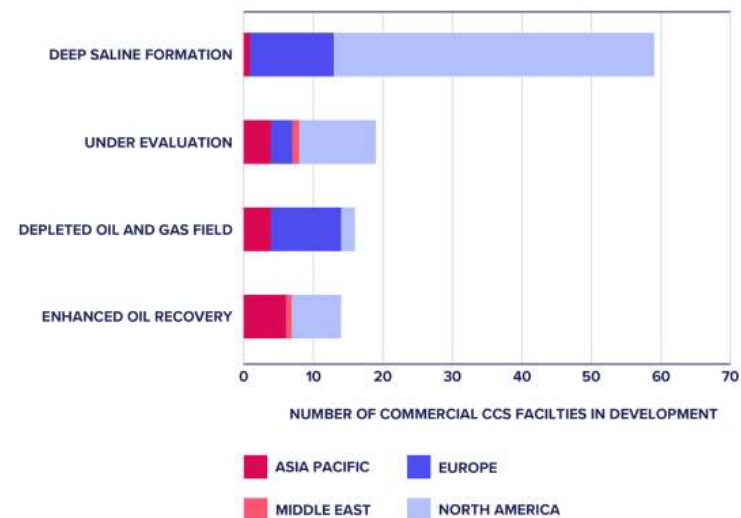
- 4 new operational
- 11 in Construction
- 26 countries
- 30 total operational
- 61 new facilities added
- 75 mtpa new capacity
- 244 mtpa total capacity
- 110x increase required

CCUS PROJECTS IN DEVELOPMENT – MAY 2023



EVOLUTION OF STORAGE

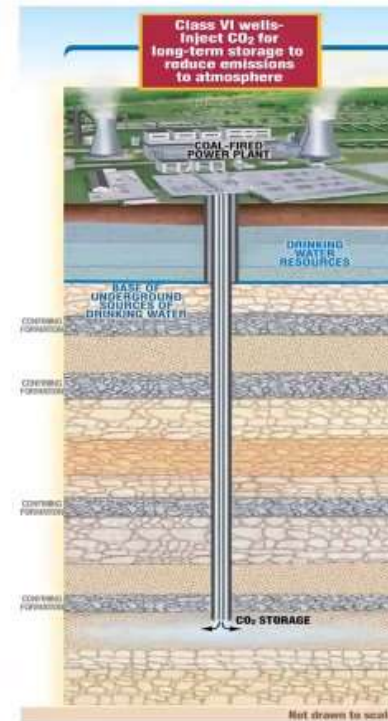
- From EOR to Designated Geological Storage (DGS)
 - Operating facilities: 70% (9 of 30) use EOR
 - In Development: 70% to use dedicated geological storage (deep saline formations, depleted oil and gas fields)
- Storage Hubs:
 - From singular to shared
 - Per site injection volumes increasing – from 1 mtpa to 5 mtpa ++



* Analysis of 108 facilities in development with dedicated storage sites

UNDERGROUND INJECTION CONTROL

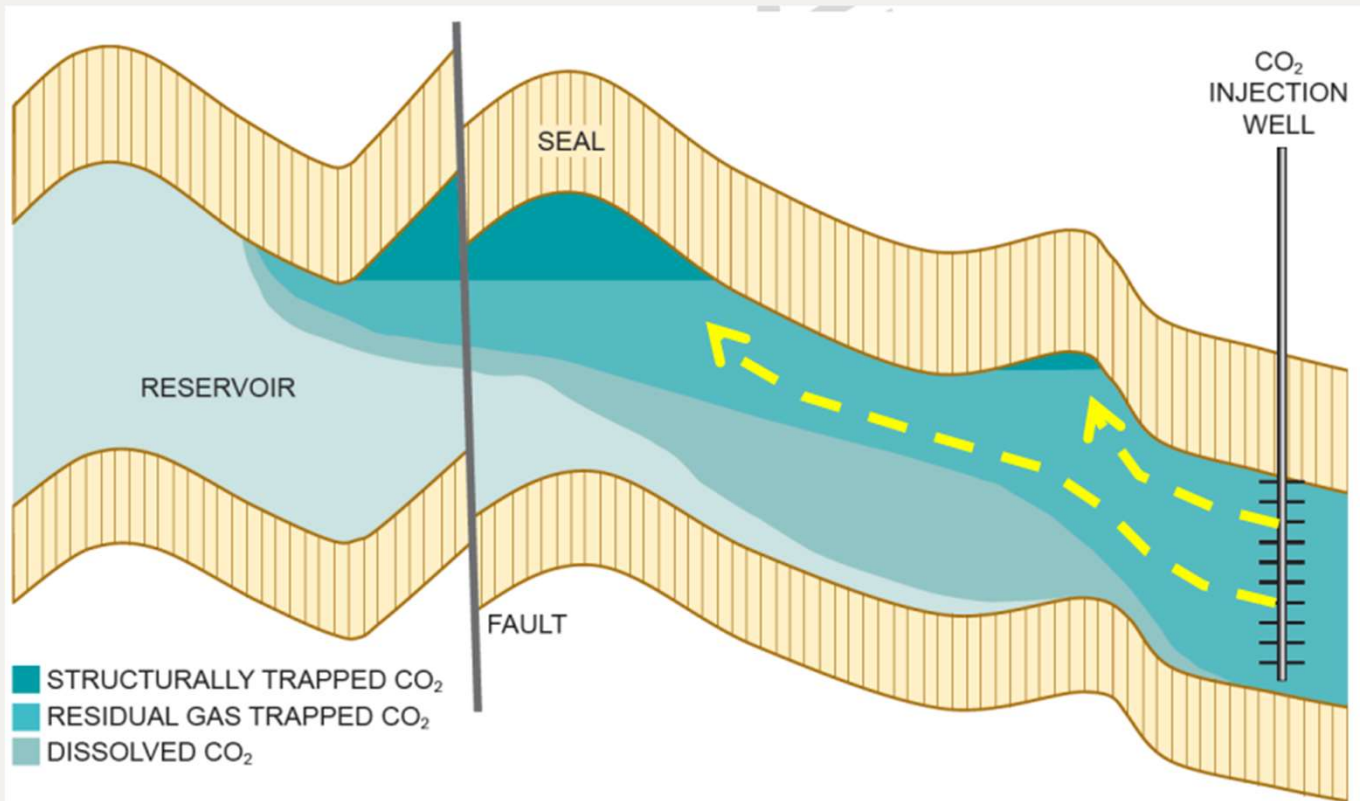
- The Underground injection control (UIC) program is run by the Environmental Protection Agency (EPA).
- There are 6 classes of wells used for underground injection; EPA has requirements for the "construction, operation, permitting, and closure of injection wells used to place fluids underground for storage or disposal".
 - Class I: Industrial and municipal waste disposal wells.
 - Class II: Oil and gas related injection wells.
 - Class III: Injection wells for solution mining.
 - Class IV: Shallow hazardous and radioactive injection wells.
 - Class V: Wells for Injection of Non-Hazardous Fluids into or Above Underground Sources of Drinking Water (USDWs).
 - **Class VI: Wells used for Geologic Sequestration of Carbon Dioxide.**



Wellbore schematic/graphic

Source: [Class VI - Wells used for Geologic Sequestration of Carbon Dioxide](#)

DEEP SALINE RESERVOIRS – BASIC IDEA



- ADVANTAGE
 - LARGE
 - UNPENETRATED
- DISADVANTAGE
 - LACK OF DATA AVAILABILITY

After National Petroleum Council, 2019. Meeting the dual challenge. A roadmap to at-scale deployment of carbon capture, use and storage.

EVOLUTION OF CAPTURE

- Networks, aka Hubs, proliferating
- Diverse industries: cement, steel, ethanol, coal-to-chem, hydrogen, waste-to-energy, gas power
- Direct Air Capture
 - First operational
 - Oxy: 70-135 sites
 - Huge push from DOE
- Micro-sources, e.g. buildings in NYC



THE CONTINUED RISE OF CCS NETWORKS

- Networks continue to emerge as the preferred deployment method in the US and Europe.
- Multiple industrial point sources of CO₂ connected to a CO₂ transport and storage network.
- Access to large geological storage resources with the capacity to store CO₂ from industrial sources for decades.
- Economies of scale deliver lower unit-costs for CO₂ storage.
- Synergies between multiple CO₂ sources and the storage operator reduce cross chain risks and support commercial viability.

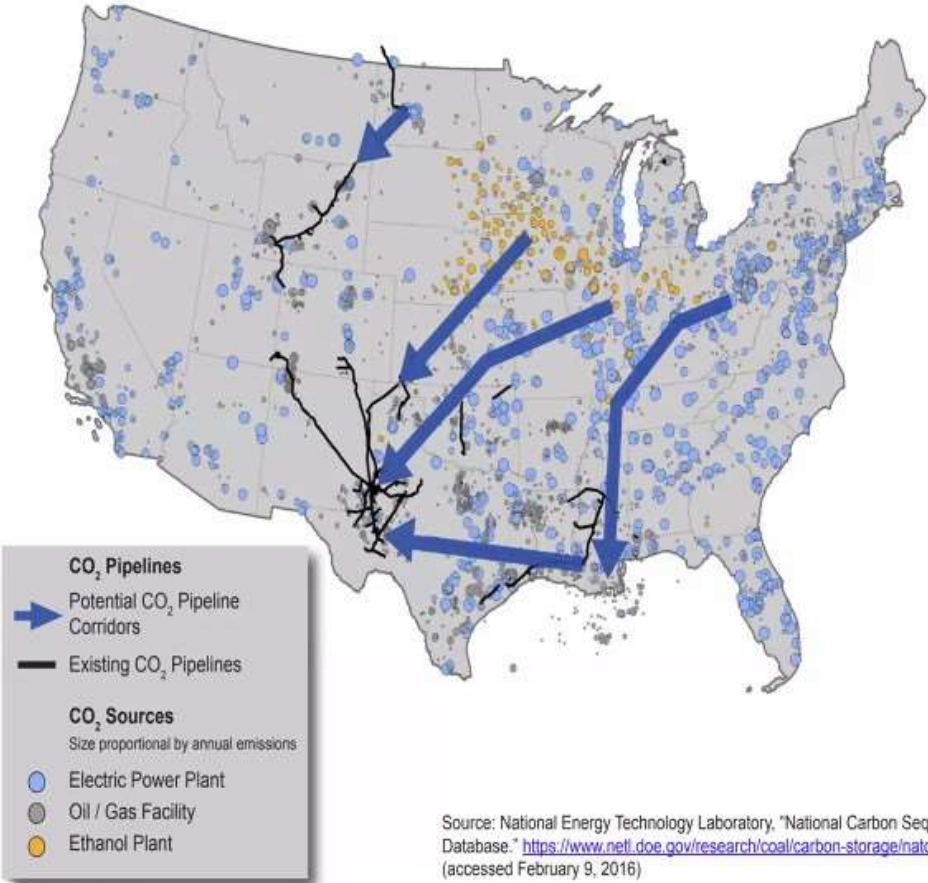


Drilling rig working on Offshore Appraisal Well (OAW) at Pelican site in Bass Strait, Victoria, Australia for the CarbonNet project.



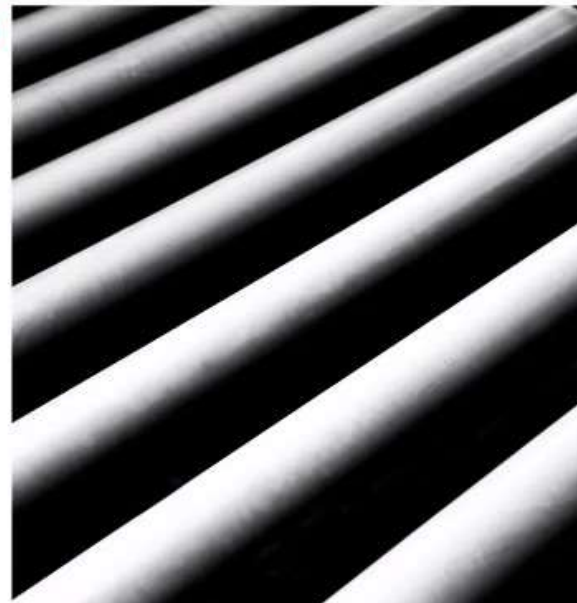
US CO2 PIPELINE INFRASTRUCTURE

Potential Regional CO₂ Pipeline Corridors (Illustrative Purposes Only)



CO₂ PIPELINE CONCERNS

- Not in my backyard (NIMBY)“: Communities are not keen to have CO₂ pipelines being laid in their area.
- Safety: Communities are concerned about safety of CO₂ pipelines
- Extending life of fossil fuels: This is a distant third cause of concern after NIMBY and safety, however it is one that is used by some groups to catalyze opposition.



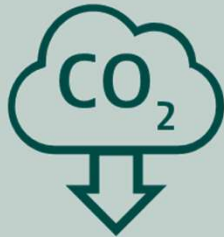
NET-ZERO BY 2050 REQUIRES STRONG ACTION BY 2030

- Although the increasing deployment of CCS is encouraging, we are far short of the scale required to achieve net-zero.
- The installed capacity of CCS needs to increase by at least 100-fold by 2050 to meet our climate targets.
- Reaching the required scale for CCS will require us all to work together: Governments to put in place supportive policy; private sector to build, own and operate; and financial sector to provide capital.



REGULATION, POLICY, IRA 2022

POSITIVE DEVELOPMENTS WITH CCUS



RD&D continues to drive down cost of capture

- ✓ New technologies are being developed; second-generation technologies are ready for deployment; transformational technologies are in development (scale-up required)
- ✓ FOAK to NOAK commercial demonstration technologies significantly reduces costs



Policy incentives such as the Section 45Q tax credit, the Bipartisan Infrastructure Law, and the California Low Carbon Fuel Standard are driving investment



Project risk/uncertainty are reduced through regulatory/legal frameworks (Class VI UIC/State Primacy, clarification of pore space ownership), and 3rd party business models



DOE Fossil Energy and Carbon Management's focus on CCUS



New federal agencies and state governments supporting CCUS deployment (BOEM/BSSE, DOI, state legislators) with access to pore space and long-term stewardship frameworks



Advances with education & workforce development and stakeholder engagement

INTERNAL REVENUE CODE SECTION 45Q: TAX CREDIT

- Type of Credit: Carbon Sequestration Credit
- Term: 12 Years from placed in service date
- Start of Construction: Prior to January 1, 2026 (2033)
- Credit Rate: Varies based on activity (see accompanying graphic)

TAX CREDIT VALUE AVAILABLE FROM DIFFERENT SOURCES AND USES OF CO₂

MINIMUM SIZE OF ELIGIBLE CARBON CAPTURE PLANT BY TYPE (ktCO ₂ /YR)				RELEVANT LEVEL OF TAX CREDIT IN A GIVEN OPERATIONAL YEAR (\$USD/tCO ₂)									
Type of CO ₂ Storage/Use	Power Plant	Other Industrial Facility	Direct Air Capture	2018	2019	2020	2021	2022	2023	2024	2025	2026	BEYOND 2026
Dedicated Geological Storage	500 18.75	100 12.5	100 1	\$25.70	\$28.74	\$31.77	\$34.81	\$37.85	\$40.89 \$85	\$43.92 \$85	\$46.96 \$85	\$50.00 \$85	Indexed to Inflation
Storage via EOR	500 18.75	100 12.5	100 1	\$15.29	\$17.76	\$20.22	\$22.68	\$25.15	\$27.61 \$60	\$30.07 \$60	\$32.54 \$60	\$35.00 \$60	
Other Utilization Processes ¹	25 18.75	25 12.5	25 1	\$15.29	\$17.76	\$20.22	\$22.68	\$25.15	\$27.61 \$60	\$30.07 \$60	\$32.54 \$60	\$35.00 \$60	

¹ Each CO₂ source cannot be greater than 500 ktCO₂/yr

² Any credit will only apply to the portion of the converted CO₂ that can be shown to reduce overall emissions

SOURCE: GLOBAL CCS INSTITUTE; WITH RAW DATA FROM THE U.S. DEPARTMENT OF ENERGY

Updates via Inflation Reduction Act in RED

45Q FINANCING SOLUTIONS – AVAILABLE TO DEVELOPERS

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	TRADITIONAL TAX EQUITY	DIRECT PAY	TRANSFERABILITY
Initial Equity Requirements	Developer is responsible for project design and construction. However, a tax equity commitment may enable advantageous financing (i.e. bridge loans).	Significant – responsible for funding project design and construction.	Significant – responsible for funding project design and construction.
On-going Equity Requirements	Minimal – Tax Equity makes investment contributions to project over investment term.	Significant – responsible for funding on-going operations.	Significant – responsible for funding on-going operations.
Time Value of Money Considerations	Minimizes both equity requirements and the time horizon before returns can be realized.	Equity outstanding for potentially a long time before returns can be realized.	Equity outstanding for potentially a long time before returns can be realized.
Monetize All Tax Attributes	All tax attributes can be monetized.	Tax attributes such as depreciation and amortization and savings from operating losses may not be fully utilized.	Tax attributes such as depreciation and amortization and savings from operating losses may not be fully utilized.
Guidance Available	Yes – Safe Harbor	No – Unknown release date	No-Unknown release date

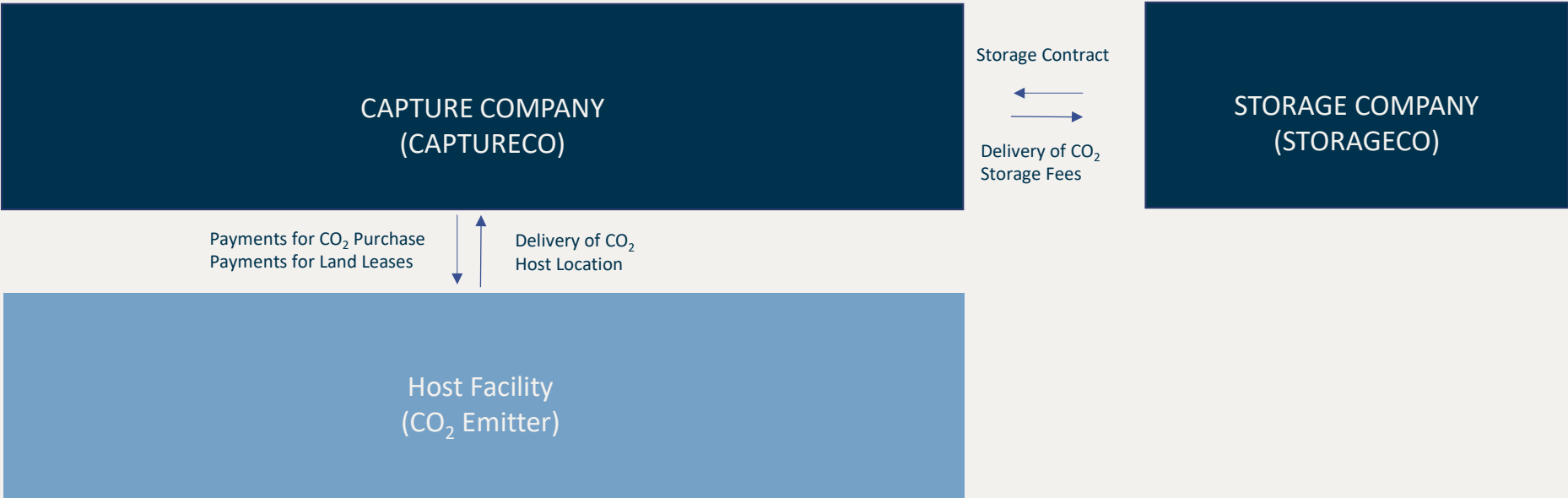
CCS PROJECT 45Q TAX CREDITS

GENERAL ASSUMPTIONS

*****Hypothetical – For Discussion Purposes Only*****

GENERAL	
ASSET LOCATION	Kansas
LCFS LOCATION	Potential Revenue from LCFS or Voluntary Carbon Market Not Included
CARBON SEQUESTRATION	Assumes On-Site/Near-Site Sequestration
TIMING	
PLACED-IN SERVICE	1/1/2025
45Q END DATE	12/31/36
CCUS	
CO ₂ PRODUCTION (TONS/YR)	200,000
CAPEX ASSUMPTION (TOTAL)	~\$50MM
OPEX ASSUMPTIONS (TOTAL)	~\$99MM
TRANSFERABILITY	
PRICE PER CREDIT	\$.90

PROJECT CONTRACT STRUCTURE



CCS DEVELOPER – Royalty Payment to Emitter for CO2 200,000 MTPA Sequestered

- General Overview
 - Developer would be responsible for owning and operating a carbon capture and sequestration (“CCS”) facility and sequester onsite via geological sequestration.
 - Developer is responsible for securing financing, permitting, construction, on-going operations (both capture & injection), and post-injection monitoring of the CCS facility.
 - Developer purchases CO2 from Emitter on a per ton basis, to capture the fermentation related CO2 produced at the biorefinery.
- Benefits to Emitter
 - \$0 cost to Emitter for CCS implementation
 - Payments received by Emitter for each ton of CO2 produced
 - Provides the ability to monetize tax credits and other tax benefits that may not be fully utilized by Emitter’s ownership structure.
 - All resulting environmental benefits from the reduction in carbon intensity (CI) scores remain with Emitter. Carbon Offset usually negotiated as a separate contract.
 - Reflects the least amount of involvement from Emitter

*****Hypothetical Example – For Discussion Purposes Only*****

		Total:	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General Volume & Credit Assumptions																
Total CO2 Captured & Sequestered	\$000s	2,400			200	200	200	200	200	200	200	200	200	200	200	200
Applicable Tax Credit Rate	\$0s				\$ 85.00	\$ 85.00	\$ 86.70	\$ 88.43	\$ 90.20	\$ 92.01	\$ 93.85	\$ 95.72	\$ 97.64	\$ 99.59	\$ 101.58	\$ 103.61
Tax Credits Generated	\$000s	\$223,868			\$17,000	\$17,000	\$17,340	\$17,687	\$18,041	\$18,401	\$18,769	\$19,145	\$19,528	\$19,918	\$20,317	\$20,723
General Expense Assumptions																
Capital Expenditures	\$000s	\$ (50,000)	\$ (15,000)	\$ (35,000)												
Ongoing Operations & Maintenance	\$000s	\$ (99,344)			\$ (7,000)	\$ (7,210)	\$ (7,426)	\$ (7,649)	\$ (7,879)	\$ (8,115)	\$ (8,358)	\$ (8,609)	\$ (8,867)	\$ (9,133)	\$ (9,407)	\$ (9,690)
Total Expenses	\$000s	\$ (149,344)	\$ (15,000)	\$ (35,000)	\$ (7,000)	\$ (7,210)	\$ (7,426)	\$ (7,649)	\$ (7,879)	\$ (8,115)	\$ (8,358)	\$ (8,609)	\$ (8,867)	\$ (9,133)	\$ (9,407)	\$ (9,690)
Option 1: Developer																
Total Tons	000s	\$ 2,400			200	200	200	200	200	200	200	200	200	200	200	200
Hypothetical Payment Per Ton	\$0s				\$ 17.00	\$ 17.00	\$ 17.34	\$ 17.69	\$ 18.04	\$ 18.40	\$ 18.77	\$ 19.14	\$ 19.53	\$ 19.92	\$ 20.32	\$ 20.72
Net Payments to Emitter	\$000s	\$ 44,774	\$ -	\$ -	\$ 3,400	\$ 3,400	\$ 3,468	\$ 3,537	\$ 3,608	\$ 3,680	\$ 3,754	\$ 3,829	\$ 3,906	\$ 3,984	\$ 4,063	\$ 4,145
Net Payments to Developer		\$ 79,750			\$6,600	\$6,390	\$6,446	\$6,500	\$6,554	\$6,606	\$6,657	\$6,707	\$6,755	\$6,801	\$6,846	\$6,889
XNPV @ 10% Discount Rate	\$000s	\$21,554														

- Emitter retains 20% of 45Q Tax Credits generated, Developer retains 46%
- Developer Capex \$50Mn, payout 7yrs
- 200,000MTPA considered small volume. Minimum capital requirement to install capture equipment and sequester facility

400,000 MTPA Sequestered

Hypothetical Example – For Discussion Purposes Only

		Total:	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General Volume & Credit Assumptions																
Total CO2 Captured & Sequestered	\$000s	4,800			400	400	400	400	400	400	400	400	400	400	400	400
Applicable Tax Credit Rate	\$0s				\$ 85.00	\$ 85.00	\$ 86.70	\$ 88.43	\$ 90.20	\$ 92.01	\$ 93.85	\$ 95.72	\$ 97.64	\$ 99.59	\$ 101.58	\$ 103.61
Tax Credits Generated	\$000s	\$447,736			\$34,000	\$34,000	\$34,680	\$35,374	\$36,081	\$36,803	\$37,539	\$38,290	\$39,055	\$39,836	\$40,633	\$41,446
General Expense Assumptions																
Capital Expenditures	\$000s	\$ (70,000)	\$ (30,000)	\$ (40,000)												
Ongoing Operations & Maintenance	\$000s	\$ (149,016)			\$ (10,500)	\$ (10,815)	\$ (11,139)	\$ (11,474)	\$ (11,818)	\$ (12,172)	\$ (12,538)	\$ (12,914)	\$ (13,301)	\$ (13,700)	\$ (14,111)	\$ (14,534)
Total Expenses	\$000s	\$ (219,016)	\$ (30,000)	\$ (40,000)	\$ (10,500)	\$ (10,815)	\$ (11,139)	\$ (11,474)	\$ (11,818)	\$ (12,172)	\$ (12,538)	\$ (12,914)	\$ (13,301)	\$ (13,700)	\$ (14,111)	\$ (14,534)
Option 1: Developer																
Total Tons	000s	\$ 4,800			400	400	400	400	400	400	400	400	400	400	400	400
Hypothetical Payment Per Ton	\$0s				\$ 17.00	\$ 17.00	\$ 17.34	\$ 17.69	\$ 18.04	\$ 18.40	\$ 18.77	\$ 19.14	\$ 19.53	\$ 19.92	\$ 20.32	\$ 20.72
Net Payments to Emitter	\$000s	\$ 89,547	\$ -	\$ -	\$ 6,800	\$ 6,800	\$ 6,936	\$ 7,075	\$ 7,216	\$ 7,361	\$ 7,508	\$ 7,658	\$ 7,811	\$ 7,967	\$ 8,127	\$ 8,289
Net Payments to Developer		\$ 209,173			\$16,700	\$16,385	\$16,605	\$16,825	\$17,047	\$17,270	\$17,493	\$17,718	\$17,943	\$18,169	\$18,395	\$18,622
XNPV @ 10% Discount Rate	\$000s	\$43,108														

- Capex increased 40%, OpEx increased 50% from 200,000MTPA to 400,000MTPA
- Emitter retains 20% of 45Q Tax Credits generated, Developer retains 47%
- Developer Capex \$70Mn, payout 4.1yrs

QUESTIONS

A photograph of a large industrial facility, possibly a refinery or chemical plant, with a complex network of pipes, steel structures, and walkways. The image is overlaid with a dark blue gradient. The text is centered in the middle of the image.

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