



Six Keys to Accelerating CCS Project Growth

Chris Davis
Vice President of Carbon Sequestration

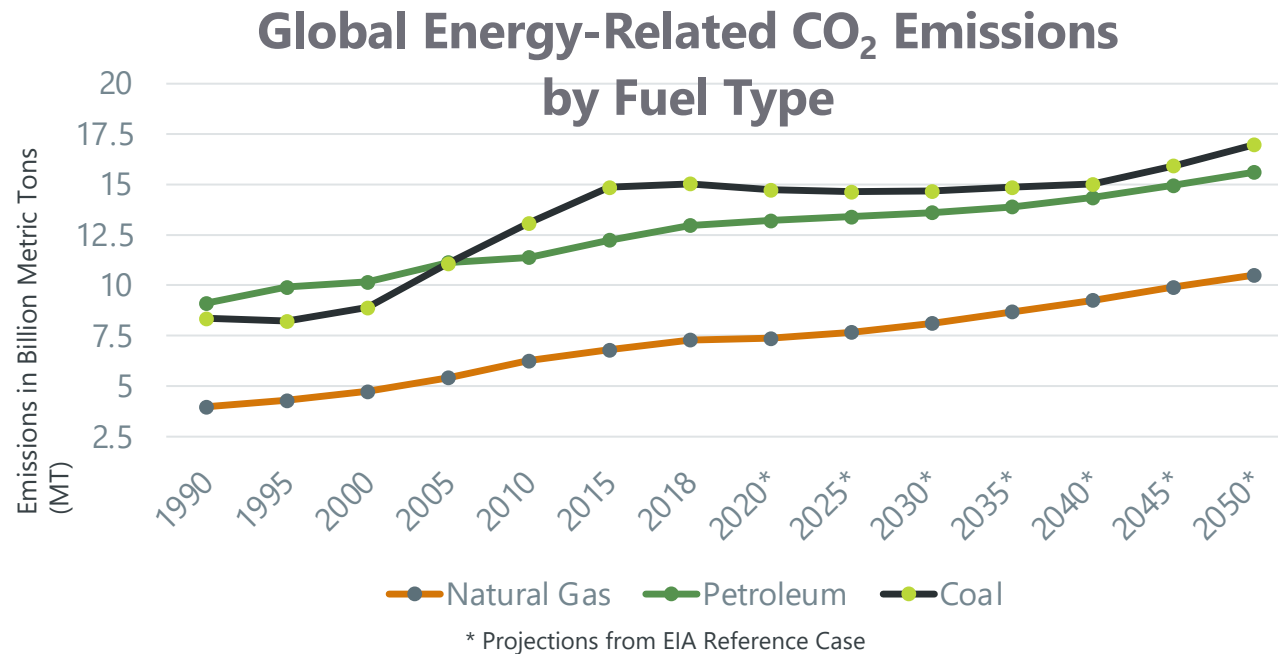
April 7, 2022 ~ EnerCom Dallas 2022



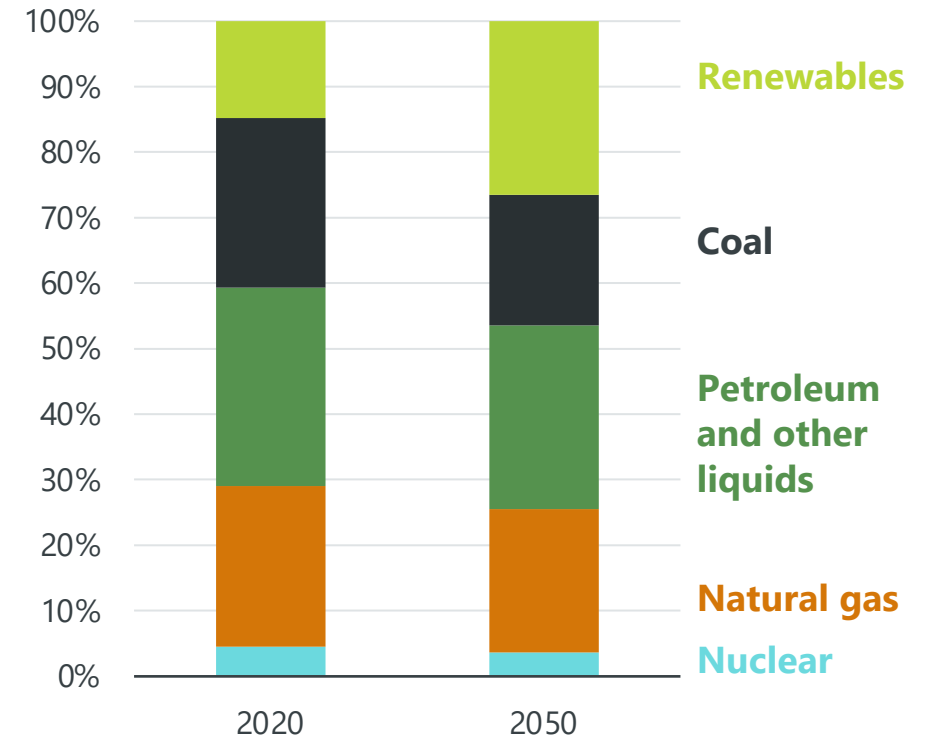
Carbon Fuels Dominate Global Economy Through 2050



China's coal consumption will continue to drive high CO₂ emissions



Global Share of Consumption by Fuel Type



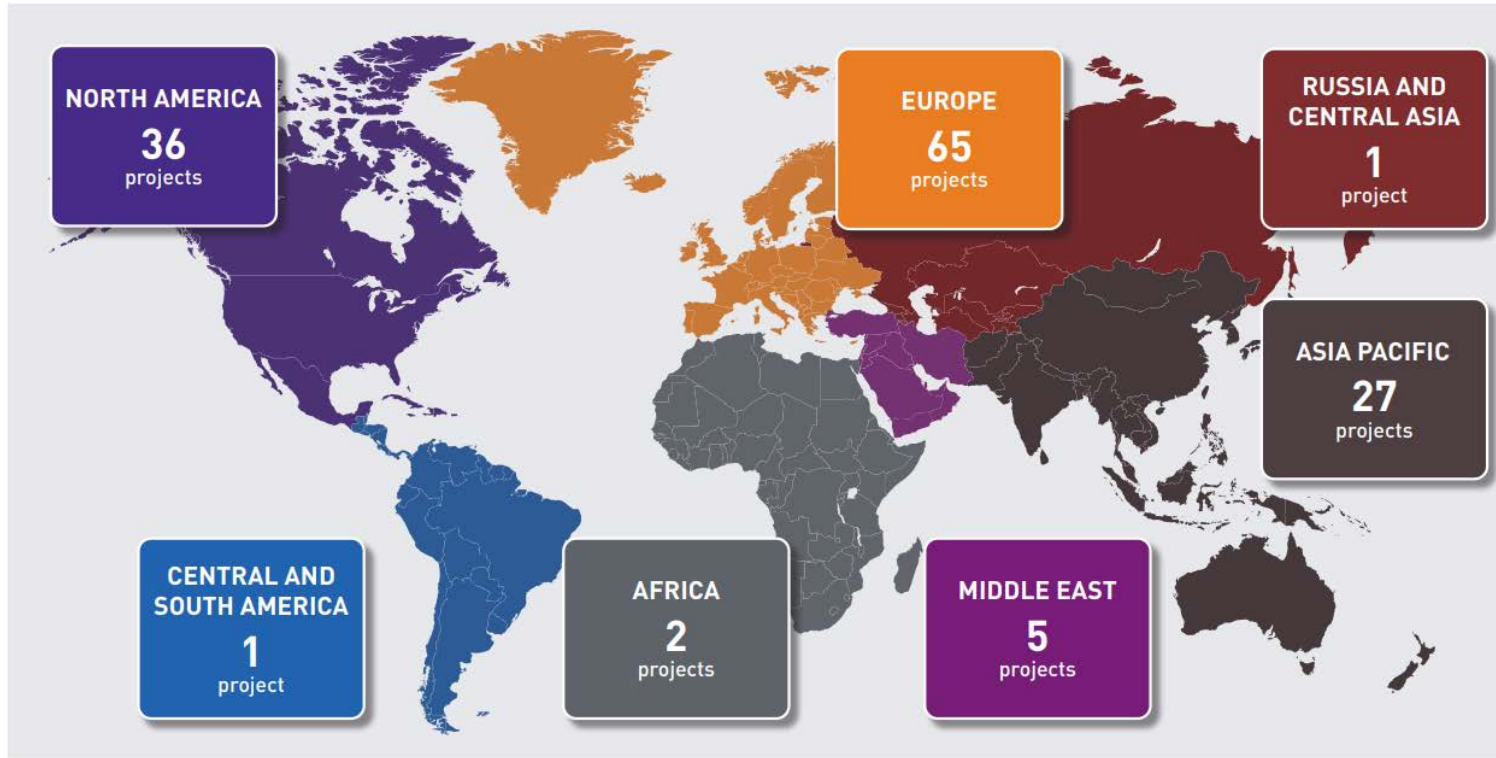
SOURCE: EIA and Statista 2022

Source: U.S. Energy Information Administration, *International Energy Outlook 2021* (IEO2021) Reference case

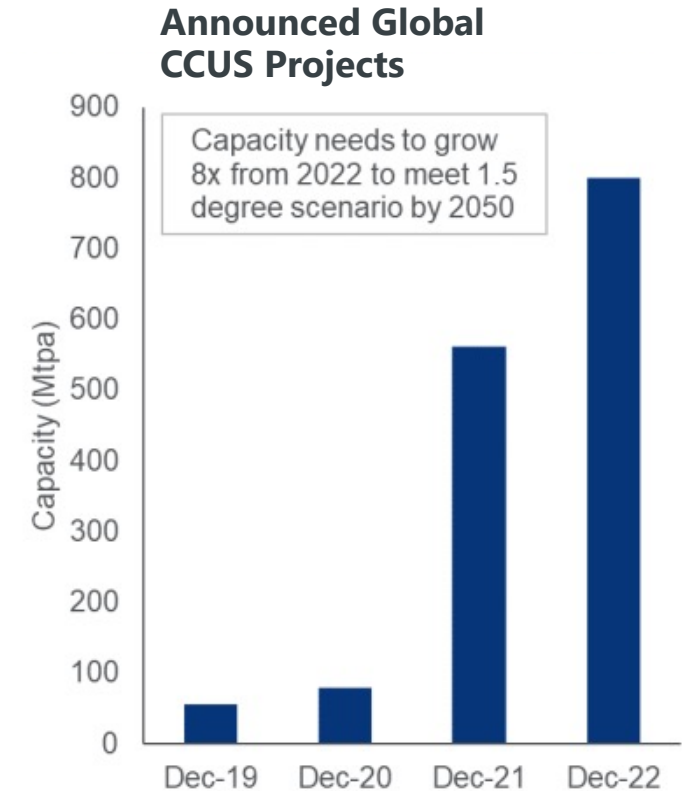


Net-Zero Targets Increase Project Growth

Nearly 50 new CCUS and low-carbon hydrogen projects announced in 2021



SOURCE: Int'l Association of Oil & Gas Producers, 2022

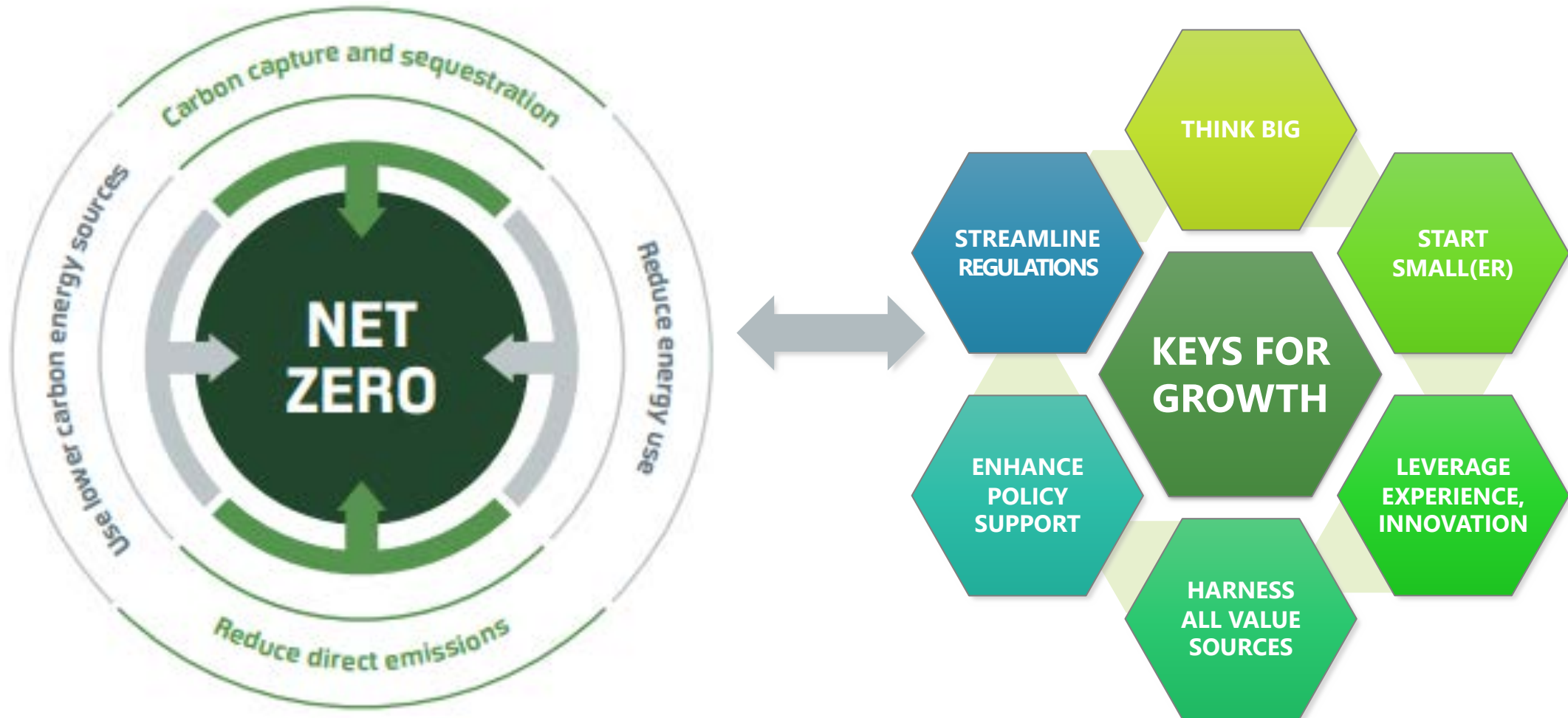


SOURCE: Wood Mackenzie Energy Transition Service



Six Keys to Accelerating CCS Project Growth

Foundational projects capture learnings, spread innovation, cut costs

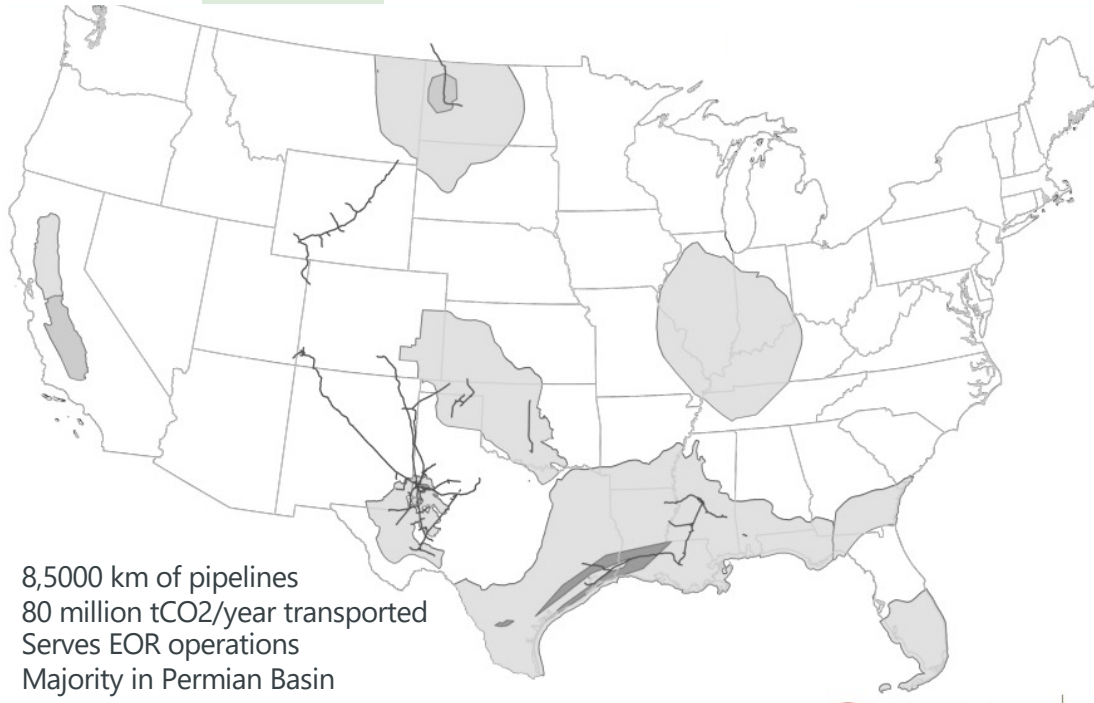


1. Think BIG



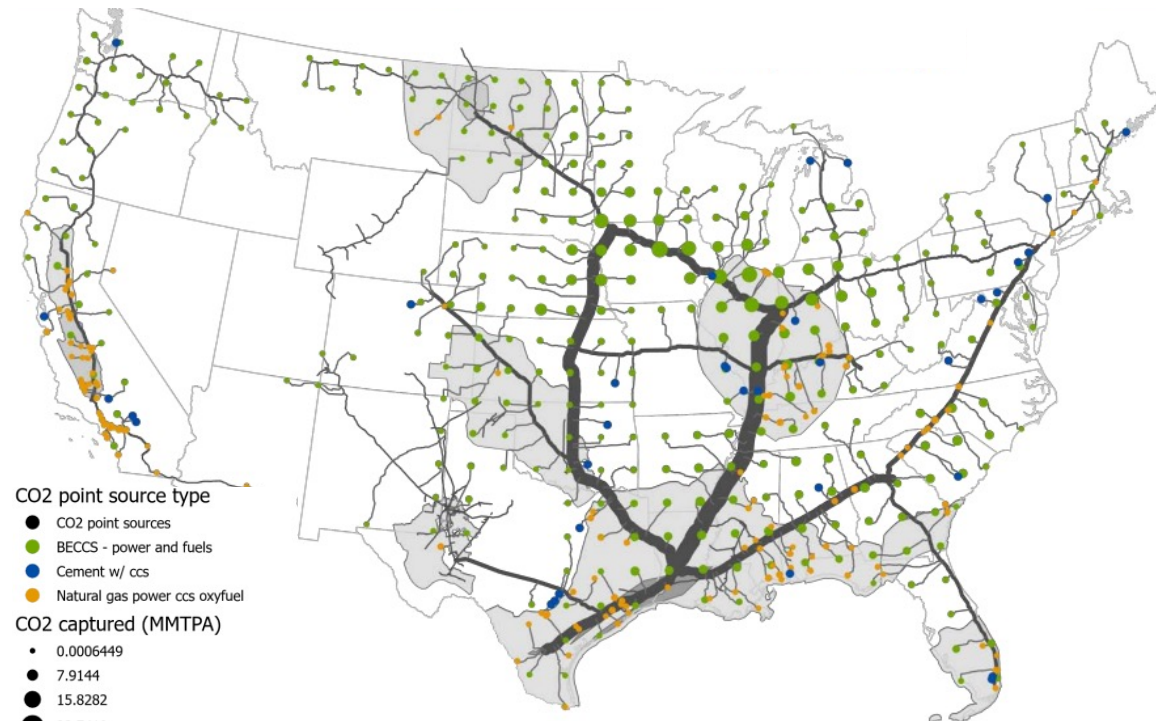
Regional pipelines and CCS hubs reduce costs through shared infrastructure

2020 Existing CO₂ Pipeline Network



- 8,5000 km of pipelines
- 80 million tCO₂/year transported
- Serves EOR operations
- Majority in Permian Basin

2050 21,000 km Trunk Lines + 85,000 Spur Lines
(equivalent to ~22% U.S. natural gas transmission pipeline total)



- CO₂ point source type
- CO₂ point sources
 - BECCS - power and fuels
 - Cement w/ ccs
 - Natural gas power ccs oxyfuel

- CO₂ captured (MMTPA)
- 0.0006449
 - 7.9144
 - 15.8282
 - 23.7419

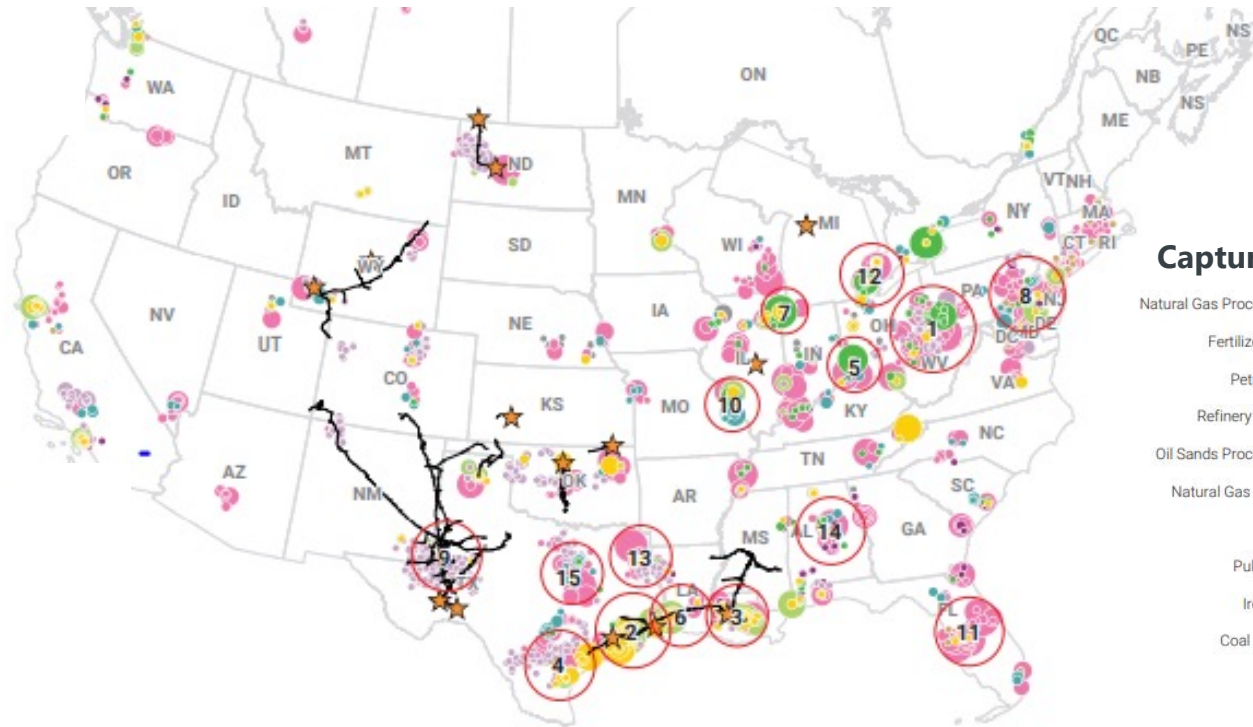
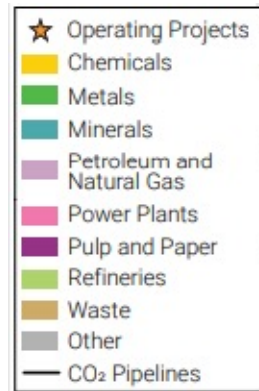
- Trunk lines (capacity in MMTPA)
- 5
 - 166.667
 - 328.333
 - 490



2. Start Small(er)

Embrace foundation projects in high CO₂ concentration areas

Major US Emissions Hubs¹



Capture Breakeven by Subsector²

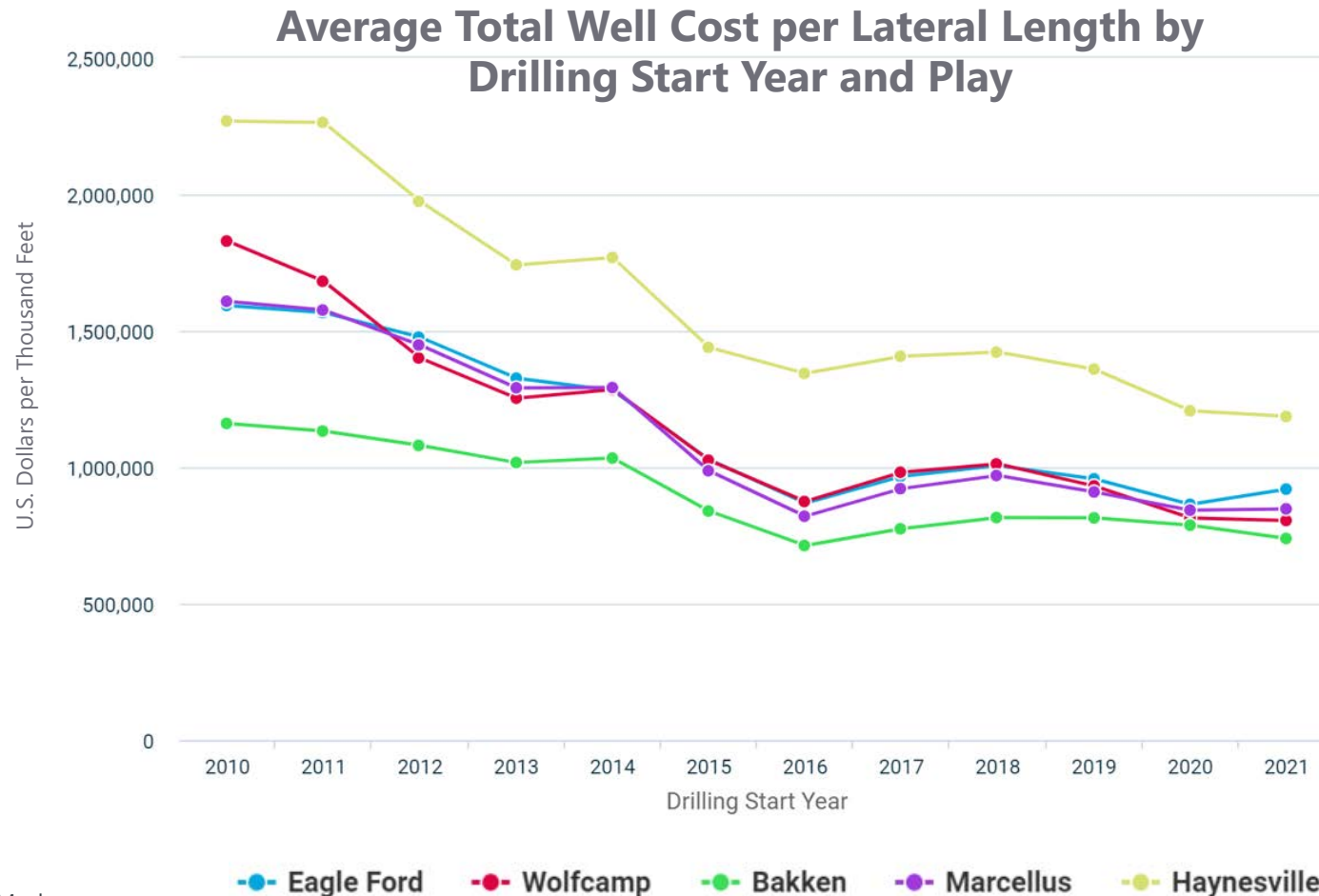


SOURCES: ¹Enverus and EPA, 2019
²Enveus, IEAGHG, NETL, USDDE



3. Leverage Experience, Innovation

Think “Shale Revolution” where agile projects, industry expertise made U.S. a natural gas exporter



49% Decline

“What we really want to do is unleash the ingenuity of the American economy for the cheapest ton of CO₂ to abate wherever it can occur.”

Michael Greenstone
Economist, University of Chicago
former Obama administration official

SOURCE: Wood Mackerr



4. Harness All Sources of Value

Small project viability depends on commercial considerations



1. Government Support

Collect 45Q tax credits and other future U.S. or non-U.S. government subsidies for carbon sequestration projects.



2. Carbon Offsets

Register & trade sequestered carbon on the U.S. or International voluntary offset markets.



3. Low-Carbon Product Premium

Oil & Gas buyers increasingly seeking low-carbon product. Expect future market premiums or differentiated pricing.



4. Investor ESG Metrics

Satisfying shareholders and improving market outlook by meeting exceedingly stringent ESG goals.



5. Enhance Policy Support

Changes to 45Q and liability laws are needed

45Q Today
• Construction by Dec. 31, 2025
• Tax Credits (2021 – 2026) <ul style="list-style-type: none">• \$35 - \$50 MT Geo Storage• \$23 - \$35 MT EOR• \$23 - \$35 MT Other Use
• No Direct Pay Options
• Capture Requirements: <ul style="list-style-type: none">• 25,000 MT Industrial• 500,000 MT Power Plant• 100,000 MT DAC



Updates to Spur Growth
• Extend Project Start Dates
• Higher Values for CO₂
• Direct Pay Options
• Reduce or Eliminate Minimum Capture Requirements

Liability Today
Owner/Operator Liable in Perpetuity

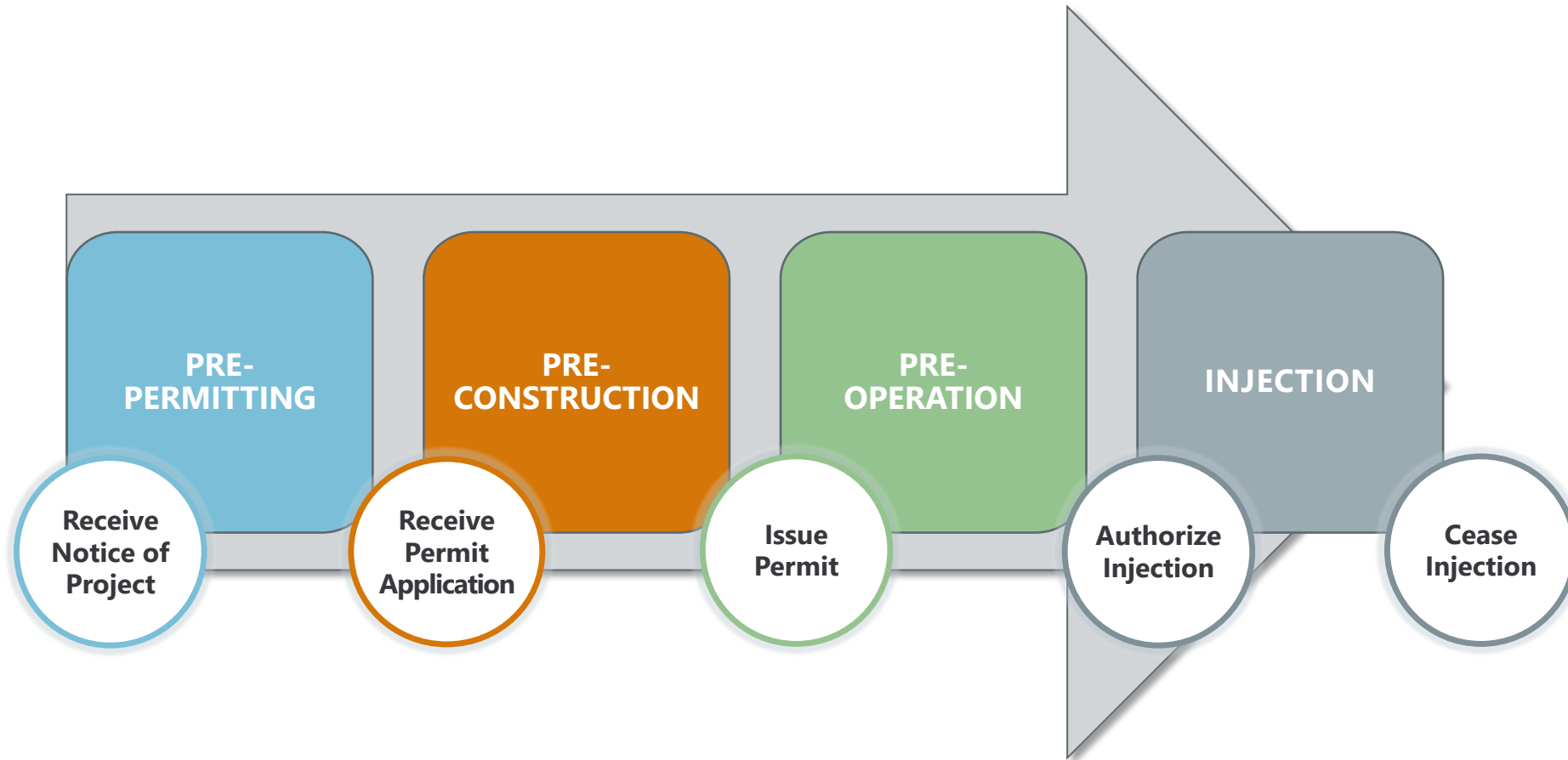


North Dakota, Wyoming Model
Federal/State liability



6. Streamline Class VI Permit Application Phases

Government, Industry work together to reduce multi-year process



Starting Small is Key to Big Growth



Starting Small is Key to Big Growth

Partner with Milestone to get your CCS project in the ground





Questions?

Chris Davis

Vice President of Carbon Sequestration

ChrisDavis@milestone-es.com

281-907-3851 **M**

Milestone-es.com