

Carbon Capture, Utilization, and Storage (CCUS) Global Market 2025-2045

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Abstracts

As the world intensifies its efforts to achieve net-zero emissions, CCUS technologies are emerging as critical solutions for reducing emissions across essential hard-to-abate sectors sectors. Carbon capture, utilization, and storage (CCUS) refers to technologies that capture CO2 emissions and use or store them, leading to permanent sequestration. CCUS technologies capture carbon dioxide emissions from large power sources, including power generation or industrial facilities that use either fossil fuels or biomass for fuel. CO2 can also be captured directly from the atmosphere. If not utilized onsite, captured CO2 is compressed and transported by pipeline, ship, rail or truck to be used in a range of applications, or injected into deep geological formations (including depleted oil and gas reservoirs or saline formations) which trap th CO2 for permanent storage.

Carbon Capture, Utilization, and Storage (CCUS) Global Market 2025-2045 offers an indepth analysis offers valuable insights for stakeholders in the energy, industrial, and environmental sectors, as well as policymakers, investors, and researchers seeking to understand the transformative potential of CCUS in the global transition to a low-carbon economy. Report contents include:

Analysis of market trends for integrated CCUS solutions, the rise of direct air capture technologies, and the growing interest in CO2 utilization for value-added products.

In-depth examination of key CCUS technologies, their current state of development, and future innovations:

Carbon Capture:



Post-combustion capture

Pre-combustion capture

Oxy-fuel combustion

Direct air capture (DAC)

Emerging capture technologies (e.g., membrane-based, cryogenic)

Carbon Utilization:

CO2-derived fuels and chemicals

Building materials and concrete curing

Enhanced oil recovery (EOR)

Biological utilization (e.g., algae cultivation)

Mineralization processes

Carbon Storage:

Geological sequestration in saline aquifers

Depleted oil and gas reservoirs

Enhanced oil recovery (EOR) with storage

Mineral carbonation

Ocean storage (potential future applications)

Technology readiness levels (TRLs) of various CCUS approaches, highlighting areas of rapid advancement and identifying potential game-changers in the industry.



Global CCUS capacity additions by technology and region

CO2 capture volumes by source (power generation, industry, direct air capture)

Utilization volumes by application (fuels, chemicals, materials, EOR)

Storage volumes by type (geological, mineralization, other)

Market size and revenue projections for key CCUS segments

Investment trends and capital expenditure forecasts

Comprehensive overview of the CCUS industry value chain, from technology providers and equipment manufacturers to project developers and end-users.

Detailed profiles of over 300 companies across the CCUS value chain. Companies profiled include Again, Airhive, Aker Carbon Capture, AspiraDAC, Capsol Technologies, Captura, Carbofex Oy, Carbon Blue, CarbonCapture, CarbonFree, Charm Industrial, Climeworks, Exxon Mobil, Graphyte, Holocene, ION Clean Energy, MCI Carbon, Mission Zero, Neustark, Noya, Octavia Carbon, Removr, Sirona Technologies, and Storegga.

Analysis of key players' strategies, market positioning, and competitive advantages

Assessment of partnerships, mergers, and acquisitions shaping the industry

Evaluation of emerging start-ups and innovative technology providers

Regional Analysis including current and planned CCUS projects, regulatory frameworks, investment climates, and growth opportunities.

Policy and Regulatory Landscape

Analysis of global, regional, and national climate policies impacting CCUS

Overview of carbon pricing mechanisms and their effect on CCUS economics

Examination of incentives, tax credits, and support schemes for CCUS projects,



Assessment of regulatory frameworks for CO2 transport and storage Projections of future policy developments and their market implications Detailed cost breakdowns for capture, transport, utilization, and storage Analysis of cost reduction trends and projections Comparison of CCUS costs across different applications and technologies Assessment of revenue streams and business models for CCUS projects Evaluation of the role of carbon markets in CCUS economics Challenges and Opportunities including: High capital and operational costs Technological barriers and scale-up issues Public perception and social acceptance Regulatory uncertainty and policy risks Infrastructure development needs Emerging opportunities, such as: Integration with hydrogen production for blue hydrogen Negative emissions technologies (NETs) like BECCS and DACCS Development of CCUS hubs and clusters Novel CO2 utilization pathways in high-value products Potential for CCUS in hard-to-abate sectors



Future Outlook and Scenarios including Pace of technological innovation Strength of climate policies and carbon pricing Public acceptance and support for CCUS Integration with other clean energy technologies Global economic trends and energy market dynamics

This comprehensive market report is an essential resource for:

Energy and industrial companies exploring CCUS opportunities

Technology providers and equipment manufacturers in the CCUS space

Project developers and investors in clean energy and climate solutions

Policymakers and regulators shaping climate and energy policies

Research institutions and academics studying carbon management strategies

Environmental organizations and think tanks focused on climate change mitigation

Financial institutions and analysts assessing the CCUS market potential



Contents

1 ABBREVIATIONS

2 RESEARCH METHODOLOGY

- 2.1 Definition of Carbon Capture, Utilisation and Storage (CCUS)
- 2.2 Technology Readiness Level (TRL)

3 EXECUTIVE SUMMARY

- 3.1 Main sources of carbon dioxide emissions
- 3.2 CO2 as a commodity
- 3.3 Meeting climate targets
- 3.4 Market drivers and trends
- 3.5 The current market and future outlook
- 3.6 CCUS Industry developments 2020-2024
- 3.7 CCUS investments
 - 3.7.1 Venture Capital Funding
 - 3.7.1.1 2010-2022
 - 3.7.1.2 CCUS VC deals 2022-2024
- 3.8 Government CCUS initiatives
 - 3.8.1 North America
 - 3.8.2 Europe
 - 3.8.3 Asia
 - 3.8.3.1 Japan
 - 3.8.3.2 Singapore
 - 3.8.3.3 China
- 3.9 Market map
- 3.10 Commercial CCUS facilities and projects
- 3.10.1 Facilities
 - 3.10.1.1 Operational
 - 3.10.1.2 Under development/construction
- 3.11 CCUS Value Chain
- 3.12 Key market barriers for CCUS
- 3.13 Carbon pricing
 - 3.13.1 Compliance Carbon Pricing Mechanisms
 - 3.13.2 Alternative to Carbon Pricing: 45Q Tax Credits
 - 3.13.3 Business models



- 3.13.4 The European Union Emission Trading Scheme (EU ETS)
- 3.13.5 Carbon Pricing in the US
- 3.13.6 Carbon Pricing in China
- 3.13.7 Voluntary Carbon Markets
- 3.13.8 Challenges with Carbon Pricing
- 3.14 Global market forecasts
 - 3.14.1 CCUS capture capacity forecast by end point
 - 3.14.2 Capture capacity by region to 2045, Mtpa
 - 3.14.3 Revenues
 - 3.14.4 CCUS capacity forecast by capture type

4 INTRODUCTION

- 4.1 What is CCUS?
 - 4.1.1 Carbon Capture
 - 4.1.1.1 Source Characterization
 - 4.1.1.2 Purification
 - 4.1.1.3 CO2 capture technologies
 - 4.1.2 Carbon Utilization
 - 4.1.2.1 CO2 utilization pathways
 - 4.1.3 Carbon storage
 - 4.1.3.1 Passive storage
 - 4.1.3.2 Enhanced oil recovery
- 4.2 Transporting CO2
 - 4.2.1 Methods of CO2 transport
 - 4.2.1.1 Pipeline
 - 4.2.1.2 Ship
 - 4.2.1.3 Road
 - 4.2.1.4 Rail
 - 4.2.2 Safety
- 4.3 Costs
- 4.3.1 Cost of CO2 transport
- 4.4 Carbon credits

5 CARBON DIOXIDE CAPTURE

- 5.1 CO2 capture technologies
- 5.2 >90% capture rate
- 5.3 99% capture rate



- 5.4 CO2 capture from point sources
 - 5.4.1 Energy Availability and Costs
 - 5.4.2 Power plants with CCUS
 - 5.4.3 Transportation
 - 5.4.4 Global point source CO2 capture capacities
 - 5.4.5 By source
 - 5.4.6 Blue hydrogen
 - 5.4.6.1 Steam-methane reforming (SMR)
 - 5.4.6.2 Autothermal reforming (ATR)
 - 5.4.6.3 Partial oxidation (POX)
 - 5.4.6.4 Sorption Enhanced Steam Methane Reforming (SE-SMR)
 - 5.4.6.5 Pre-Combustion vs. Post-Combustion carbon capture
 - 5.4.6.6 Blue hydrogen projects
 - 5.4.6.7 Costs
 - 5.4.6.8 Market players
 - 5.4.8 Carbon capture in cement
 - 5.4.8.1 CCUS Projects
 - 5.4.8.2 Carbon capture technologies
 - 5.4.8.3 Costs
 - 5.4.8.4 Challenges
 - 5.4.9 Maritime carbon capture
- 5.5 Main carbon capture processes
 - 5.5.1 Materials
 - 5.5.2 Post-combustion
 - 5.5.2.1 Chemicals/Solvents
 - 5.5.2.2 Amine-based post-combustion CO2 absorption
 - 5.5.2.3 Physical absorption solvents
 - 5.5.3 Oxy-fuel combustion
 - 5.5.3.1 Oxyfuel CCUS cement projects
 - 5.5.3.2 Chemical Looping-Based Capture
 - 5.5.4 Liquid or supercritical CO2: Allam-Fetvedt Cycle
 - 5.5.5 Pre-combustion
- 5.6 Carbon separation technologies
 - 5.6.1 Absorption capture
 - 5.6.2 Adsorption capture
 - 5.6.2.1 Solid sorbent-based CO2 separation
 - 5.6.2.2 Metal organic framework (MOF) adsorbents
 - 5.6.2.3 Zeolite-based adsorbents
 - 5.6.2.4 Solid amine-based adsorbents



- 5.6.2.5 Carbon-based adsorbents
- 5.6.2.6 Polymer-based adsorbents
- 5.6.2.7 Solid sorbents in pre-combustion
- 5.6.2.8 Sorption Enhanced Water Gas Shift (SEWGS)
- 5.6.2.9 Solid sorbents in post-combustion
- 5.6.3 Membranes
 - 5.6.3.1 Membrane-based CO2 separation
- 5.6.3.2 Post-combustion CO2 capture
- 5.6.3.2.1 Facilitated transport membranes
- 5.6.3.3 Pre-combustion capture
- 5.6.4 Liquid or supercritical CO2 (Cryogenic) capture
- 5.6.4.1 Cryogenic CO2 capture
- 5.6.5 Calcium Looping
 - 5.6.5.1 Calix Advanced Calciner
- 5.6.6 Other technologies
- 5.6.6.1 LEILAC process
- 5.6.6.2 CO2 capture with Solid Oxide Fuel Cells (SOFCs)
- 5.6.6.3 CO2 capture with Molten Carbonate Fuel Cells (MCFCs)
- 5.6.6.4 Microalgae Carbon Capture
- 5.6.7 Comparison of key separation technologies
- 5.6.8 Technology readiness level (TRL) of gas separation technologies
- 5.7 Opportunities and barriers
- 5.8 Costs of CO2 capture
- 5.9 CO2 capture capacity
- 5.10 Bioenergy with carbon capture and storage (BECCS)
 - 5.10.1 Overview of technology
 - 5.10.2 Biomass conversion
 - 5.10.3 BECCS facilities
 - 5.10.4 Challenges
- 5.11 Direct air capture (DAC)
 - 5.11.1 Technology description
 - 5.11.1.1 Sorbent-based CO2 Capture
 - 5.11.1.2 Solvent-based CO2 Capture
 - 5.11.1.3 DAC Solid Sorbent Swing Adsorption Processes
 - 5.11.1.4 Electro-Swing Adsorption (ESA) of CO2 for DAC
 - 5.11.1.5 Solid and liquid DAC
 - 5.11.2 Advantages of DAC
 - 5.11.3 Deployment
 - 5.11.4 Point source carbon capture versus Direct Air Capture



- 5.11.5 Technologies
 - 5.11.5.1 Solid sorbents
 - 5.11.5.2 Liquid sorbents
 - 5.11.5.3 Liquid solvents
 - 5.11.5.4 Airflow equipment integration
 - 5.11.5.5 Passive Direct Air Capture (PDAC)
 - 5.11.5.6 Direct conversion
 - 5.11.5.7 Co-product generation
- 5.11.5.8 Low Temperature DAC
- 5.11.5.9 Regeneration methods
- 5.11.6 Electricity and Heat Sources
- 5.11.7 Commercialization and plants
- 5.11.8 Metal-organic frameworks (MOFs) in DAC
- 5.11.9 DAC plants and projects-current and planned
- 5.11.10 Capacity forecasts
- 5.11.11 Costs
- 5.11.12 Market challenges for DAC
- 5.11.13 Market prospects for direct air capture
- 5.11.14 Players and production
- 5.11.15 Co2 utilization pathways
- 5.11.16 Markets for Direct Air Capture and Storage (DACCS)
- 5.11.16.1 Fuels
 - 5.11.16.1.1 Overview
 - 5.11.16.1.2 Production routes
 - 5.11.16.1.3 Methanol
 - 5.11.16.1.4 Algae based biofuels
 - 5.11.16.1.5 CO2-fuels from solar
 - 5.11.16.1.6 Companies
- 5.11.16.1.7 Challenges
- 5.11.16.2 Chemicals, plastics and polymers
- 5.11.16.2.1 Overview
- 5.11.16.2.2 Scalability
- 5.11.16.2.3 Plastics and polymers
- 5.11.16.2.3.1 CO2 utilization products
- 5.11.16.2.4 Urea production
- 5.11.16.2.5 Inert gas in semiconductor manufacturing
- 5.11.16.2.6 Carbon nanotubes
- 5.11.16.2.7 Companies
- 5.11.16.3 Construction materials



- 5.11.16.3.1 Overview
- 5.11.16.3.2 CCUS technologies
- 5.11.16.3.3 Carbonated aggregates
- 5.11.16.3.4 Additives during mixing
- 5.11.16.3.5 Concrete curing
- 5.11.16.3.6 Costs
- 5.11.16.3.7 Companies
- 5.11.16.3.8 Challenges
- 5.11.16.4 CO2 Utilization in Biological Yield-Boosting
- 5.11.16.4.1 Overview
- 5.11.16.4.2 Applications
- 5.11.16.4.2.1 Greenhouses
- 5.11.16.4.2.2 Algae cultivation
- 5.11.16.4.2.3 Microbial conversion
- 5.11.16.4.3 Companies
- 5.11.16.5 Food and feed production
- 5.11.16.6 CO2 Utilization in Enhanced Oil Recovery
- 5.11.16.6.1 Overview
 - 5.11.16.6.1.1 Process
- 5.11.16.6.1.2 CO2 sources
- 5.11.16.6.2 CO2-EOR facilities and projects

6 CARBON DIOXIDE REMOVAL

- 6.1 Conventional CDR on land
 - 6.1.1 Wetland and peatland restoration
- 6.1.2 Cropland, grassland, and agroforestry
- 6.2 Technological CDR Solutions
- 6.3 Technology Readiness Level (TRL): Carbon Dioxide Removal Methods
- 6.4 Carbon Credits
- 6.5 Value chain
- 6.6 Monitoring, reporting, and verification
- 6.7 Government policies
- 6.8 BECCS
 - 6.8.1 Technology overview
 - 6.8.1.1 Point Source Capture Technologies for BECCS
 - 6.8.1.2 Energy efficiency
 - 6.8.1.3 Heat generation
 - 6.8.1.4 Waste-to-Energy



- 6.8.1.5 Blue Hydrogen Production
- 6.8.2 Biomass conversion
- 6.8.3 CO2 capture technologies
- 6.8.4 Bioenergy with Carbon Removal and Storage (BiCRS)
- 6.8.4.1 Advantages
- 6.8.4.2 Challenges
- 6.8.4.3 Costs
- 6.8.4.4 Feedstocks
- 6.8.5 BECCS facilities
- 6.8.6 Cost analysis
- 6.8.7 BECCS carbon credits
- 6.8.8 Sustainability
- 6.8.9 Challenges
- 6.9 Enhanced Weathering
 - 6.9.1 Overview
 - 6.9.1.1 Role of enhanced weathering in carbon dioxide removal
 - 6.9.1.2 CO2 mineralization
 - 6.9.2 Enhanced Weathering Processes and Materials
 - 6.9.3 Enhanced Weathering Applications
 - 6.9.4 Trends and Opportunities
 - 6.9.5 Challenges and Risks
 - 6.9.6 Cost analysis
 - 6.9.7 SWOT analysis
- 6.10 Afforestation/Reforestation
 - 6.10.1 Overview
 - 6.10.2 Carbon dioxide removal methods
 - 6.10.3 Remote sensing in A/R
 - 6.10.4 Robotics
 - 6.10.5 Trends and Opportunities
 - 6.10.6 Challenges and Risks
 - 6.10.7 SWOT analysis
- 6.11 Soil carbon sequestration (SCS)
 - 6.11.1 Overview
 - 6.11.2 Practices
 - 6.11.3 Measuring and Verifying
 - 6.11.4 Trends and Opportunities
 - 6.11.5 Carbon credits
 - 6.11.6 Challenges and Risks
 - 6.11.7 SWOT analysis



6.12 Biochar

- 6.12.1 What is biochar?
- 6.12.2 Carbon sequestration
- 6.12.3 Properties of biochar
- 6.12.4 Feedstocks
- 6.12.5 Production processes
- 6.12.5.1 Sustainable production
- 6.12.5.2 Pyrolysis
- 6.12.5.2.1 Slow pyrolysis
- 6.12.5.2.2 Fast pyrolysis
- 6.12.5.3 Gasification
- 6.12.5.4 Hydrothermal carbonization (HTC)
- 6.12.5.5 Torrefaction
- 6.12.5.6 Equipment manufacturers
- 6.12.6 Biochar pricing
- 6.12.7 Biochar carbon credits
- 6.12.7.1 Overview
- 6.12.7.2 Removal and reduction credits
- 6.12.7.3 The advantage of biochar
- 6.12.7.4 Prices
- 6.12.7.5 Buyers of biochar credits
- 6.12.7.6 Competitive materials and technologies
- 6.12.8 Bio-oil based CDR
- 6.12.9 Biomass burial for CO2 removal
- 6.12.10 Bio-based construction materials for CDR
- 6.12.11 SWOT analysis
- 6.13 Ocean-based CDR
 - 6.13.1 Overview
 - 6.13.2 Ocean pumps
 - 6.13.3 CO2 capture from seawater
 - 6.13.4 Ocean fertilisation
 - 6.13.5 Coastal blue carbon
 - 6.13.6 Algal cultivation
 - 6.13.7 Artificial upwelling
 - 6.13.8 MRV for marine CDR
 - 6.13.9 Ocean alkalinisation
 - 6.13.10 Ocean alkalinity enhancement (OAE)
 - 6.13.11 Electrochemical ocean alkalinity enhancement
 - 6.13.12 Direct ocean capture technology



- 6.13.13 Artificial downwelling
- 6.13.14 Trends and Opportunities
- 6.13.15 Ocean-based carbon credits
- 6.13.16 Cost analysis
- 6.13.17 Challenges and Risks
- 6.13.18 SWOT analysis

7 CARBON DIOXIDE UTILIZATION

- 7.1 Overview
- 7.1.1 Current market status
- 7.2 Carbon utilization business models
- 7.2.1 Benefits of carbon utilization
- 7.2.2 Market challenges
- 7.3 Co2 utilization pathways
- 7.4 Conversion processes
 - 7.4.1 Thermochemical
 - 7.4.1.1 Process overview
 - 7.4.1.2 Plasma-assisted CO2 conversion
 - 7.4.2 Electrochemical conversion of CO2
 - 7.4.2.1 Process overview
 - 7.4.3 Photocatalytic and photothermal catalytic conversion of CO2
 - 7.4.4 Catalytic conversion of CO2
 - 7.4.5 Biological conversion of CO2
 - 7.4.6 Copolymerization of CO2
 - 7.4.7 Mineral carbonation
- 7.5 CO2-derived products
 - 7.5.1 Fuels
 - 7.5.1.1 Overview
 - 7.5.1.2 Production routes
 - 7.5.1.3 CO2 -fuels in road vehicles
 - 7.5.1.4 CO2 -fuels in shipping
 - 7.5.1.5 CO2 -fuels in aviation
 - 7.5.1.6 Power-to-methane
 - 7.5.1.6.1 Biological fermentation
 - 7.5.1.6.2 Costs
 - 7.5.1.7 Algae based biofuels
 - 7.5.1.8 CO2-fuels from solar
 - 7.5.1.9 Companies



- 7.5.1.10 Challenges
- 7.5.2 Chemicals and polymers
- 7.5.2.1 Polycarbonate from CO2
- 7.5.2.2 Carbon nanostructures
- 7.5.2.3 Scalability
- 7.5.2.4 Applications
- 7.5.2.4.1 Urea production
- 7.5.2.4.2 CO2-derived polymers
- 7.5.2.4.3 Inert gas in semiconductor manufacturing
- 7.5.2.4.4 Carbon nanotubes
- 7.5.2.5 Companies
- 7.5.3 Construction materials
- 7.5.3.1 Overview
- 7.5.3.2 CCUS technologies
- 7.5.3.3 Carbonated aggregates
- 7.5.3.4 Additives during mixing
- 7.5.3.5 Concrete curing
- 7.5.3.6 Costs
- 7.5.3.7 Market trends and business models
- 7.5.3.8 Companies
- 7.5.3.9 Challenges
- 7.5.4 CO2 Utilization in Biological Yield-Boosting
 - 7.5.4.1 Overview
 - 7.5.4.2 Applications
 - 7.5.4.2.1 Greenhouses
 - 7.5.4.2.2 Algae cultivation
 - 7.5.4.2.2.1 CO2-enhanced algae cultivation: open systems
 - 7.5.4.2.2.2 CO2-enhanced algae cultivation: closed systems
 - 7.5.4.2.3 Microbial conversion
 - 7.5.4.2.4 Food and feed production
 - 7.5.4.3 Companies
- 7.6 CO2 Utilization in Enhanced Oil Recovery
 - 7.6.1 Overview
 - 7.6.1.1 Process
 - 7.6.1.2 CO2 sources
 - 7.6.2 CO2-EOR facilities and projects
 - 7.6.3 Challenges
- 7.7 Enhanced mineralization
 - 7.7.1 Advantages



- 7.7.2 In situ and ex-situ mineralization
- 7.7.3 Enhanced mineralization pathways
- 7.7.4 Challenges

8 CARBON DIOXIDE STORAGE

- 8.1 Introduction
- 8.2 CO2 storage sites
 - 8.2.1 Storage types for geologic CO2 storage
 - 8.2.2 Oil and gas fields
 - 8.2.3 Saline formations
- 8.2.4 Coal seams and shale
- 8.2.5 Basalts and ultra-mafic rocks
- 8.3 CO2 leakage
- 8.4 Global CO2 storage capacity
- 8.5 CO2 Storage Projects
- 8.6 CO2 -EOR
- 8.6.1 Description
- 8.6.2 Injected CO2
- 8.6.3 CO2 capture with CO2 -EOR facilities
- 8.6.4 Companies
- 8.6.5 Economics
- 8.7 Costs
- 8.8 Challenges

9 CARBON DIOXIDE TRANSPORTATION

- 9.1 Introduction
- 9.2 CO2 transportation methods and conditions
- 9.3 CO2 transportation by pipeline
- 9.4 CO2 transportation by ship
- 9.5 CO2 transportation by rail and truck
- 9.6 Cost analysis of different methods
- 9.7 Companies

10 COMPANY PROFILES 414 (310 COMPANY PROFILES)

11 REFERENCES



List Of Tables

LIST OF TABLES

Table 1. Technology Readiness Level (TRL) Examples.

Table 2. Carbon Capture, Utilisation and Storage (CCUS) market drivers and trends.

Table 3. Carbon capture, usage, and storage (CCUS) industry developments 2020-2024.

- Table 4. CCUS VC deals 2022-2024.
- Table 5. CCUS government funding and investment-10 year outlook.
- Table 6. Demonstration and commercial CCUS facilities in China.
- Table 7. Global commercial CCUS facilities-in operation.
- Table 8. Global commercial CCUS facilities-under development/construction.
- Table 9. Key market barriers for CCUS.
- Table 10. Key compliance carbon pricing initiatives around the world.
- Table 11. CCUS business models: full chain, part chain, and hubs and clusters.
- Table 12. CCUS capture capacity forecast by CO2 endpoint, Mtpa of CO2, to 2045.
- Table 13. Capture capacity by region to 2045, Mtpa.
- Table 14. CCUS revenue potential for captured CO2 offtaker, billion US \$ to 2045.
- Table 15. CCUS capacity forecast by capture type, Mtpa of CO2, to 2045.

Table 16. Point-source CCUS capture capacity forecast by CO2 source sector, Mtpa of CO2, to 2045.

- Table 17. CO2 utilization and removal pathways
- Table 18. Approaches for capturing carbon dioxide (CO2) from point sources.
- Table 19. CO2 capture technologies.
- Table 20. Advantages and challenges of carbon capture technologies.
- Table 21. Overview of commercial materials and processes utilized in carbon capture.
- Table 22. Methods of CO2 transport.
- Table 23. Carbon capture, transport, and storage cost per unit of CO2
- Table 24. Estimated capital costs for commercial-scale carbon capture.
- Table 25. Comparison of CO2 capture technologies.
- Table 26. Typical conditions and performance for different capture technologies.
- Table 27. PSCC technologies.
- Table 28. Point source examples.
- Table 29. Comparison of point-source CO2 capture systems
- Table 30. Blue hydrogen projects.
- Table 31. Commercial CO2 capture systems for blue H2.
- Table 32. Market players in blue hydrogen.
- Table 33. CCUS Projects in the Cement Sector.



Table 34. Carbon capture technologies in the cement sector.

Table 35. Cost and technological status of carbon capture in the cement sector.

- Table 36. Assessment of carbon capture materials
- Table 37. Chemical solvents used in post-combustion.
- Table 38. Comparison of key chemical solvent-based systems.

Table 39. Chemical absorption solvents used in current operational CCUS point-source projects.

- Table 40.Comparison of key physical absorption solvents.
- Table 41.Physical solvents used in current operational CCUS point-source projects.
- Table 42. Emerging solvents for carbon capture
- Table 43. Oxygen separation technologies for oxy-fuel combustion.
- Table 44. Large-scale oxyfuel CCUS cement projects.
- Table 45. Commercially available physical solvents for pre-combustion carbon capture.
- Table 46. Main capture processes and their separation technologies.
- Table 47. Absorption methods for CO2 capture overview.
- Table 48. Commercially available physical solvents used in CO2 absorption.
- Table 49. Adsorption methods for CO2 capture overview.
- Table 50. Solid sorbents explored for carbon capture.
- Table 51. Carbon-based adsorbents for CO2 capture.
- Table 52. Polymer-based adsorbents.
- Table 53. Solid sorbents for post-combustion CO2 capture.
- Table 54. Emerging Solid Sorbent Systems.
- Table 55. Membrane-based methods for CO2 capture overview.
- Table 56. Comparison of membrane materials for CCUS
- Table 57.Commercial status of membranes in carbon capture
- Table 58. Membranes for pre-combustion capture.
- Table 59. Status of cryogenic CO2 capture technologies.
- Table 60. Benefits and drawbacks of microalgae carbon capture.
- Table 61. Comparison of main separation technologies.
- Table 62. Technology readiness level (TRL) of gas separation technologies
- Table 63. Opportunities and Barriers by sector.
- Table 64. Existing and planned capacity for sequestration of biogenic carbon.
- Table 65. Existing facilities with capture and/or geologic sequestration of biogenic CO2.
- Table 66. DAC technologies.
- Table 67. Advantages and disadvantages of DAC.
- Table 68. Advantages of DAC as a CO2 removal strategy.
- Table 69. Companies developing airflow equipment integration with DAC.
- Table 70. Companies developing Passive Direct Air Capture (PDAC) technologies.
- Table 71. Companies developing regeneration methods for DAC technologies.



- Table 72. DAC companies and technologies.
- Table 73. DAC technology developers and production.
- Table 74. DAC projects in development.
- Table 75. DACCS carbon removal capacity forecast (million metric tons of CO2 per
- year), 2024-2045, base case.

Table 76. DACCS carbon removal capacity forecast (million metric tons of CO2 per

- year), 2030-2045, optimistic case.
- Table 77. Costs summary for DAC.
- Table 78. Typical cost contributions of the main components of a DACCS system.
- Table 79. Cost estimates of DAC.
- Table 80. Challenges for DAC technology.
- Table 81. DAC companies and technologies.
- Table 82. Example CO2 utilization pathways.
- Table 83. Markets for Direct Air Capture and Storage (DACCS).
- Table 84. Market overview for CO2 derived fuels.
- Table 85. Microalgae products and prices.
- Table 86. Main Solar-Driven CO2 Conversion Approaches.
- Table 87. Companies in CO2-derived fuel products.
- Table 88. Commodity chemicals and fuels manufactured from CO2.
- Table 89. CO2 utilization products developed by chemical and plastic producers.
- Table 90. Companies in CO2-derived chemicals products.
- Table 91. Carbon capture technologies and projects in the cement sector
- Table 92. Companies in CO2 derived building materials.
- Table 93. Market challenges for CO2 utilization in construction materials.
- Table 94. Companies in CO2 Utilization in Biological Yield-Boosting.
- Table 95. CO2 sequestering technologies and their use in food.
- Table 96. Applications of CCS in oil and gas production.

Table 97. Benchmarking comparison of various CDR technologies based on key parameters.

Table 98. DACCS carbon credit revenue forecast (million US\$), 2024-2045.

Table 99. CDR Value Chain.

- Table 100. CO2 capture technologies for BECCS.
- Table 101. Feedstocks for Bioenergy with Carbon Removal and Storage (BiCRS):
- Table 102. Existing and planned capacity for sequestration of biogenic carbon.

Table 103. Existing facilities with capture and/or geologic sequestration of biogenic CO2.

- Table 104. Challenges of BECCS
- Table 105.Comparison of enhanced weathering materials
- Table 106. Enhanced Weathering Applications.



- Table 107. Trends and opportunities in enhanced weathering.
- Table 108. Challenges and risks in enhanced weathering.
- Table 109. Nature-based CDR approaches.
- Table 110. Companies in robotics in afforestation/reforestation.
- Table 111. Comparison of A/R and BECCS.
- Table 112. Trends and Opportunities in afforestation/reforestation.
- Table 113. Challenges and risks in afforestation/reforestation.
- Table 114. Soil carbon sequestration practices.
- Table 115. Soil sampling and analysis methods.
- Table 116. Remote sensing and modeling techniques.
- Table 117. Carbon credit protocols and standards.
- Table 118. Trends and opportunities in soil carbon sequestration (SCS).
- Table 119. Key aspects of soil carbon credits.
- Table 120. Challenges and Risks in SCS.
- Table 121. Summary of key properties of biochar.
- Table 122. Biochar physicochemical and morphological properties
- Table 123. Biochar feedstocks-source, carbon content, and characteristics.
- Table 124. Biochar production technologies, description, advantages and

disadvantages.

- Table 125. Comparison of slow and fast pyrolysis for biomass.
- Table 126. Comparison of thermochemical processes for biochar production.
- Table 127. Biochar production equipment manufacturers.
- Table 128. Competitive materials and technologies that can also earn carbon credits.
- Table 129. Bio-oil-based CDR pros and cons.
- Table 130. Ocean-based CDR methods.
- Table 131. Benchmarking of ocean-based CDR methods:
- Table 132.Ocean-based CDR: biotic methods.
- Table 133. Technology in direct ocean capture.
- Table 134. Future direct ocean capture technologies.
- Table 135. Trends and opportunities in ocean-based CDR.
- Table 136. Challenges and risks in ocean-based CDR.
- Table 137. Carbon utilization revenue forecast by product (US\$).
- Table 138. Carbon utilization business models.
- Table 139. CO2 utilization and removal pathways.
- Table 140. Market challenges for CO2 utilization.
- Table 141. Example CO2 utilization pathways.

Table 142. CO2 derived products via Thermochemical conversion-applications, advantages and disadvantages.

Table 143. CO2 derived products via electrochemical conversion-applications,



advantages and disadvantages.

Table 144. CO2 derived products via biological conversion-applications, advantages and disadvantages.

- Table 145. Companies developing and producing CO2-based polymers.
- Table 146. Companies developing mineral carbonation technologies.
- Table 147. Comparison of emerging CO2 utilization applications.
- Table 148. Main routes to CO2-fuels.
- Table 149. Market overview for CO2 derived fuels.
- Table 150. Main routes to CO2 -fuels
- Table 151. Power-to-Methane projects.
- Table 152. Microalgae products and prices.
- Table 153. Main Solar-Driven CO2 Conversion Approaches.
- Table 154. Companies in CO2-derived fuel products.
- Table 155. Commodity chemicals and fuels manufactured from CO2.
- Table 156. Companies in CO2-derived chemicals products.
- Table 157. Carbon capture technologies and projects in the cement sector
- Table 158. Prefabricated versus ready-mixed concrete markets .
- Table 159. CO2 utilization business models in building materials.
- Table 160. Companies in CO2 derived building materials.
- Table 161. Market challenges for CO2 utilization in construction materials.
- Table 162. Companies in CO2 Utilization in Biological Yield-Boosting.
- Table 163. Applications of CCS in oil and gas production.
- Table 164. CO2 EOR/Storage Challenges.
- Table 165. Storage and utilization of CO2.
- Table 166. Mechanisms of subsurface CO2 trapping.
- Table 167. Global depleted reservoir storage projects.
- Table 168. Global CO2 ECBM storage projects.
- Table 169. CO2 EOR/storage projects.
- Table 170. Global storage sites-saline aquifer projects.
- Table 171. Global storage capacity estimates, by region.
- Table 172. MRV Technologies and Costs in CO2 Storage.
- Table 173. Carbon storage challenges.
- Table 174. Status of CO2 Storage Projects.
- Table 175. Types of CO2 -EOR designs.
- Table 176. CO2 capture with CO2 -EOR facilities.
- Table 177. CO2 -EOR companies.
- Table 178. Phases of CO2 for transportation.
- Table 179. CO2 transportation methods and conditions.
- Table 180. Status of CO2 transportation methods in CCS projects.



Table 181. CO2 pipelines Technical challenges.Table 182. Cost comparison of CO2 transportation methods

Table 183. CO2 transport operators.



List Of Figures

LIST OF FIGURES

- Figure 1. Carbon emissions by sector.
- Figure 2. Overview of CCUS market
- Figure 3. CCUS business model.
- Figure 4. Pathways for CO2 use.
- Figure 5. Regional capacity share 2023-2033.
- Figure 6. Global investment in carbon capture 2010-2023, millions USD.
- Figure 7. Carbon Capture, Utilization, & Storage (CCUS) Market Map.
- Figure 8. CCS deployment projects, historical and to 2035.
- Figure 9. Existing and planned CCS projects.
- Figure 10. CCUS Value Chain.
- Figure 11. Schematic of CCUS process.
- Figure 12. Pathways for CO2 utilization and removal.
- Figure 13. A pre-combustion capture system.
- Figure 14. Carbon dioxide utilization and removal cycle.
- Figure 15. Various pathways for CO2 utilization.
- Figure 16. Example of underground carbon dioxide storage.
- Figure 17. Transport of CCS technologies.
- Figure 18. Railroad car for liquid CO2 transport
- Figure 19. Estimated costs of capture of one metric ton of carbon dioxide (Co2) by sector.
- Figure 20. Cost of CO2 transported at different flowrates
- Figure 21. Cost estimates for long-distance CO2 transport.
- Figure 22. CO2 capture and separation technology.
- Figure 23. Global capacity of point-source carbon capture and storage facilities.
- Figure 24. Global carbon capture capacity by CO2 source, 2023.
- Figure 25. Global carbon capture capacity by CO2 source, 2040.
- Figure 26. SMR process flow diagram of steam methane reforming with carbon capture and storage (SMR-CCS).
- Figure 27. Process flow diagram of autothermal reforming with a carbon capture and storage (ATR-CCS) plant.
- Figure 28. POX process flow diagram.
- Figure 29. Process flow diagram for a typical SE-SMR.
- Figure 30. Post-combustion carbon capture process.
- Figure 31. Post-combustion CO2 Capture in a Coal-Fired Power Plant.
- Figure 32. Oxy-combustion carbon capture process.



- Figure 33. Process schematic of chemical looping.
- Figure 34. Liquid or supercritical CO2 carbon capture process.
- Figure 35. Pre-combustion carbon capture process.
- Figure 36. Amine-based absorption technology.
- Figure 37. Pressure swing absorption technology.
- Figure 38. Membrane separation technology.
- Figure 39. Liquid or supercritical CO2 (cryogenic) distillation.
- Figure 40. Cryocap process.
- Figure 41. Calix advanced calcination reactor.
- Figure 42. LEILAC process.
- Figure 43. Fuel Cell CO2 Capture diagram.
- Figure 44. Microalgal carbon capture.
- Figure 45. Cost of carbon capture.
- Figure 46. CO2 capture capacity to 2030, MtCO2.

Figure 47. Capacity of large-scale CO2 capture projects, current and planned vs. the Net?Zero Scenario,?2020-2030.

- Figure 48. Bioenergy with carbon capture and storage (BECCS) process.
- Figure 49. CO2 captured from air using liquid and solid sorbent DAC plants, storage, and reuse.
- Figure 50. Global CO2 capture from biomass and DAC in the Net Zero Scenario.
- Figure 51. Potential for DAC removal versus other carbon removal methods.
- Figure 52. DAC technologies.
- Figure 53. Schematic of Climeworks DAC system.

Figure 54. Climeworks' first commercial direct air capture (DAC) plant, based in Hinwil, Switzerland.

Figure 55. Flow diagram for solid sorbent DAC.

Figure 56. Direct air capture based on high temperature liquid sorbent by Carbon Engineering.

- Figure 57. Global capacity of direct air capture facilities.
- Figure 58. Global map of DAC and CCS plants.
- Figure 59. Schematic of costs of DAC technologies.
- Figure 60. DAC cost breakdown and comparison.
- Figure 61. Operating costs of generic liquid and solid-based DAC systems.
- Figure 62. Co2 utilization pathways and products.
- Figure 63. Conversion route for CO2-derived fuels and chemical intermediates.
- Figure 64. Conversion pathways for CO2-derived methane, methanol and diesel.
- Figure 65. CO2 feedstock for the production of e-methanol.

Figure 66. Schematic illustration of (a) biophotosynthetic, (b) photothermal, (c) microbialphotoelectrochemical, (d) photosynthetic and photocatalytic (PS/PC), (e)



photoelectrochemical (PEC), and (f) photovoltaic plus electrochemical (PV+EC) approaches for CO2 c

Figure 67. Audi synthetic fuels.

- Figure 68. Conversion of CO2 into chemicals and fuels via different pathways.
- Figure 69. Conversion pathways for CO2-derived polymeric materials
- Figure 70. Conversion pathway for CO2-derived building materials.
- Figure 71. Schematic of CCUS in cement sector.
- Figure 72. Carbon8 Systems' ACT process.
- Figure 73. CO2 utilization in the Carbon Cure process.
- Figure 74. Algal cultivation in the desert.
- Figure 75. Example pathways for products from cyanobacteria.
- Figure 76. Typical Flow Diagram for CO2 EOR.
- Figure 77. Large CO2-EOR projects in different project stages by industry.
- Figure 78. Bioenergy with carbon capture and storage (BECCS) process.
- Figure 79. SWOT analysis: enhanced weathering.
- Figure 80. SWOT analysis: afforestation/reforestation.
- Figure 81. SWOT analysis: SCS.
- Figure 82. Schematic of biochar production.
- Figure 83. Biochars from different sources, and by pyrolyzation at different temperatures.

- Figure 84. Compressed biochar.
- Figure 85. Biochar production diagram.
- Figure 86. Pyrolysis process and by-products in agriculture.
- Figure 87. SWOT analysis: Biochar for CDR.
- Figure 88. SWOT analysis: ocean-based CDR.

Figure 89. CO2 non-conversion and conversion technology, advantages and disadvantages.

- Figure 90. Applications for CO2.
- Figure 91. Cost to capture one metric ton of carbon, by sector.
- Figure 92. Life cycle of CO2-derived products and services.
- Figure 93. Co2 utilization pathways and products.

Figure 94. Plasma technology configurations and their advantages and disadvantages for CO2 conversion.

- Figure 95. Electrochemical CO2 reduction products.
- Figure 96. LanzaTech gas-fermentation process.
- Figure 97. Schematic of biological CO2 conversion into e-fuels.
- Figure 98. Econic catalyst systems.
- Figure 99. Mineral carbonation processes.
- Figure 100. Conversion route for CO2-derived fuels and chemical intermediates.



Figure 101. Conversion pathways for CO2-derived methane, methanol and diesel. Figure 102. CO2 feedstock for the production of e-methanol.

Figure 103. Schematic illustration of (a) biophotosynthetic, (b) photothermal, (c) microbial-photoelectrochemical, (d) photosynthetic and photocatalytic (PS/PC), (e) photoelectrochemical (PEC), and (f) photovoltaic plus electrochemical (PV+EC) approaches for CO2 c

Figure 104. Audi synthetic fuels.

- Figure 105. Conversion of CO2 into chemicals and fuels via different pathways.
- Figure 106. Conversion pathways for CO2-derived polymeric materials
- Figure 107. Conversion pathway for CO2-derived building materials.
- Figure 108. Schematic of CCUS in cement sector.
- Figure 109. Carbon8 Systems' ACT process.
- Figure 110. CO2 utilization in the Carbon Cure process.
- Figure 111. Algal cultivation in the desert.
- Figure 112. Example pathways for products from cyanobacteria.
- Figure 113. Typical Flow Diagram for CO2 EOR.
- Figure 114. Large CO2-EOR projects in different project stages by industry.
- Figure 115. Carbon mineralization pathways.
- Figure 116. CO2 Storage Overview Site Options
- Figure 117. CO2 injection into a saline formation while producing brine for beneficial use.
- Figure 118. Subsurface storage cost estimation.
- Figure 119. Air Products production process.
- Figure 120. Aker carbon capture system.
- Figure 121. ALGIECEL PhotoBioReactor.
- Figure 122. Schematic of carbon capture solar project.
- Figure 123. Aspiring Materials method.
- Figure 124. Aymium's Biocarbon production.
- Figure 125. Capchar prototype pyrolysis kiln.
- Figure 126. Carbonminer technology.
- Figure 127. Carbon Blade system.
- Figure 128. CarbonCure Technology.
- Figure 129. Direct Air Capture Process.
- Figure 130. CRI process.
- Figure 131. PCCSD Project in China.
- Figure 132. Orca facility.
- Figure 133. Process flow scheme of Compact Carbon Capture Plant.
- Figure 134. Colyser process.
- Figure 135. ECFORM electrolysis reactor schematic.



- Figure 136. Dioxycle modular electrolyzer.
- Figure 137. Fuel Cell Carbon Capture.
- Figure 138. Topsoe's SynCORTM autothermal reforming technology.
- Figure 139. Carbon Capture balloon.
- Figure 140. Holy Grail DAC system.
- Figure 141. INERATEC unit.
- Figure 142. Infinitree swing method.
- Figure 143. Audi/Krajete unit.
- Figure 144. Made of Air's HexChar panels.
- Figure 145. Mosaic Materials MOFs.
- Figure 146. Neustark modular plant.
- Figure 147. OCOchem's Carbon Flux Electrolyzer.
- Figure 148. ZerCaL process.
- Figure 149. CCS project at Arthit offshore gas field.
- Figure 150. RepAir technology.
- Figure 151. Soletair Power unit.
- Figure 152. Sunfire process for Blue Crude production.
- Figure 153. CALF-20 has been integrated into a rotating CO2 capture machine (left),
- which operates inside a CO2 plant module (right).
- Figure 154. Takavator.
- Figure 155. O12 Reactor.
- Figure 156. Sunglasses with lenses made from CO2-derived materials.
- Figure 157. CO2 made car part.
- Figure 158. Molecular sieving membrane.



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