



Market Reports Library

Summary

The **Circular Carbon Network (CCN)** maintains this bibliography as a shared resource and living library for members of our Network to access the latest third party reports about the investment, economic, and impact opportunities in the Carbontech and Carbon Removal Sectors. This document links to reports that contain an overview of markets for carbon capture solutions, carbon-to-value solutions, and carbon removal solutions, the key policies that may accelerate or slow growth in these sectors, technical challenges and opportunities, and perspectives from key stakeholders.

Nominate a Report:

If you don't see a report listed below that you think would be relevant to capital providers, entrepreneurs, corporates, and other stakeholders in the Circular Carbon Economy, please let us know. We are primarily focused on providing educational resources to our Network that can accelerate investment and commercial activity in the sector (thus not, per se, on technology-focused documents more useful to a highly technical audience). Please email us at community@circularcarbon.org with your suggestions. Thank you!

RECENT REPORTS

(Most recent reports listed first)

The technological and economic prospects for CO₂ utilization and removal

Category:

Date: November 6, 2019

Issued by: Nature

Summary: 11 page comprehensive study of ten different usages of CO₂, ranging from fuels, chemicals and plastics to building materials, soil management and forestry. Explores the scope and hurdles for each.

[PDF link](#)

Clearing the Air: A Federal RD&D Initiative and Management Plan for Carbon Dioxide Removal Technologies

Category: Policy, R&D

Date: September 25, 2019

Issued by: Energy Futures Initiative

Summary: 243 page in-depth report on R&D initiatives and innovations needed to accelerate carbon removal technologies. Breaks down each part of the space providing detailed analysis of the progress needed to happen.

[PDF link](#)

Capturing Leadership: Policies for the US to Advance Direct Air Capture Technology

Category: Policy

Date: May 9, 2019

Issued by: Rhodium Group

Summary: Report on the large potential for the direct air capture industry in the U.S. and the policies needed to unleash it.

[PDF link](#)

Gaseous Carbon Waste Streams Utilization: Status and Research Needs

Category: Capital, R&D, commercial deployments, market data, policy,

Date: Early 2019

Issued by: The National Academies of Sciences, Engineering, and Medicine

Summary: 256 page study of the global status and progress of CCU technologies. Analyzes the current challenges faced by the industry to achieve viability and commercialization. Lays out ways for researchers to overcome these barriers, including implementing pilot plant facilities, optimizing bioreactors and cultivation, and avoiding stoichiometric additives.

[PDF link](#)

Direct Air Capture of Carbon Dioxide

Category: Policy, R&D

Date: December 2018

Issued by: ICEF

Summary: 43 page in depth report on the current state of direct air capture technologies and future policies around the industry.

[PDF link](#)

A Review of Global and U.S. Total Available Markets for Carbontech

Category: Capital, market data

Date: November 2018

Issued by: Carbon180

Summary: 7 page market report breaking down the U.S. and global TAM for the carbontech space, \$1.1 T, and 5.9 T, respectively.

[PDF link](#)

Negative Emissions Technologies and Reliable Sequestration: A Research Agenda

Category: R&D, Commercial deployments

Date: October 2018

Issued by: National Academy of Sciences

Summary: 511 page detailed look at all carbon removal technologies, beyond simply Direct Air Capture, to include land management, ocean sequestration, and geological carbon formation.

[PDF link](#)

New Business Opportunities Based on Biogenic Carbon Dioxide Utilization

Category: R&D, commercial deployments, market data

Date: October 25 2018

Issued by: VTT Technical Research Centre of Finland

Summary: 21 slide PowerPoint exploring new biogenic CCU technology opportunities in 4 key areas: chemical-looping combustion, polyols, paraffinic wax production, and P2X technically feasible processes.

[PDF link](#)

Novel Carbon Capture and Utilisation Technologies

Category: Policy

Date: April 2018

Issued by: High Level Group of Scientific Advisors, European Commission

Summary: 76 page exploration into the circumstances under which CCU can deliver climate benefits in the mid- and long-run. Recommends implementing an institutional framework to promoting CCU technologies, whether that be through grant qualifications requiring quantitative data about the amount of carbon utilized, a stable regulatory environment, or R&D initiatives.

[PDF link](#)

Why Commercial Use Could Be the Future of Carbon Capture

Category: Commercial deployments

Date: January 2018

Issued by: McKinsey and Company

Summary: 6 page summary document providing an overview of CCU technologies and applications. Outlines 3 main uses for CCU: captured carbon created fuels, carbon-cured concrete, and carbon dioxide turbines.

[PDF link](#)

Carbon Dioxide Utilization (CO2U) ICEF Roadmap 2017

Category: Policy

Date: November 2017

Issued by: ICEF

Summary: 60 page report introducing policy proposals to expand CO2U through tax credits, investment in R&D, adoption of life-cycle analysis standards, product standards, and national policy recognition.

[PDF link](#)

Circular Carbon Innovation: An Unrealized Investment Opportunity

Category: Commercial deployments, market data

Date: September 2017

Issued by: The Circular Carbon Network

Summary: 22 page overview of the circular carbon economy and its potential. Sets up a compelling case for the rapidly expanding sector of circular carbon, laying out the myriad uses of carbon from chemicals, fuels, and building materials, to polymers, agriculture, and industrial gases. Explains some of the institutional challenges to growth for the sector, while providing smart, efficient solutions to those challenges.

[PDF link](#)

The Potential and Limitations of Using Carbon Dioxide

Category: Commercial deployments, policy

Date: May 2017

Issued by: The Royal Society

Summary: 11 page policy brief explaining the myriad uses and applications of carbon for use as a feedstock. Outlines the potential for commercial use of carbon dioxide in polymers, mineralization, and syngas. Addresses challenges to carbon dioxide commercial viability in the areas of research partnerships, life-cycle analysis, catalysis, and demonstration facilities.

[PDF link](#)

CO2 Utilisation Today

Category: Commercial deployments, policy

Date: April 2017

Issued by: EIT Climate-KIC EnCO2re

Summary: 48 page report presenting various perspectives on CO₂ utilization from chemists, social scientists, start-up founders, and policy makers. Discusses the technical, economic, and social viability of CCU technologies. Recognizes that regardless the opinions about viability, if the right technical, political, economic and societal conditions present themselves, CCU technology could be transformational.

[PDF link](#)

A Roadmap for the Global Implementation of Carbon Utilization Technologies

Category: Commercial deployments, market data

Date: November, 2016

Issued by: CO2 Sciences | The Global CO2 Initiative

Summary: This 12 page summary briefing provides a market assessment on the environmental and economic impact of 25 products over 6 markets for carbon recycling.

[PDF link](#)

Carbon Capture Utilization and Storage: Climate Change Economic Competitiveness and Energy Security

Category: Commercial deployments, policy

Date: August 2016

Issued by: Department of Energy

Summary: 12 page document by the department of energy that outlines the advantages of CCUS for energy security, economic development, industry sector opportunities, differences and overlaps between natural gas and coal CCUS, and proposed policy incentives for CCUS.

[PDF link](#)

CO2 Building Blocks: Assessing CO2 Utilization Options

Category: Commercial deployments, market data, policy

Date: August 2016

Issued by: National Coal Council

Summary: 112 page US focused document that provides rationale for CCU, criteria for assessment, overview of CCU market, assessment of CCU as a pathway to CCS and the economic opportunity.

[PDF link](#)

Carbon Capture Utilization and Storage

Category: Commercial deployments, market data, policy

Date: January 2016

Issued by: SETIS Magazine - CCUS (European Strategic Energy Technology Plan)

Summary: 52 page summary with an update and overview of activities in Europe that advance carbon capture and utilization along with key technological breakthroughs for CO₂ as a feedstock for chemicals, waxes, fuels, polymers, storage, cement, urea.

[PDF link](#)

A Strategic European Research and Innovation Agenda (SERIA) for Smart CO₂ Transformation in Europe

Category: Commercial deployments, market data

Date: July 2015

Issued by: Smart CO₂ Transformation (SCOT) project

Summary: 45 page summary document that sets out a SERIA for CO₂ utilization. Results of over 300 interviews, 10 workshops, a detailed regional assessment to map CO₂ utilization actors, a comprehensive socio-economic analysis to map emitters, elaborate desk research on three CO₂ transformation routes: mineralization, power to fuels, and chemical building blocks.

[PDF link](#)