



## Market Insights: Carbon Dioxide – 2023

**Market Insights: Carbon Dioxide - 2023** is one in a series of reports published as part of NexantECA's Markets & Profitability program.

NexantECA's Market Insights report provides a comprehensive review of the global carbon dioxide market, including sources of CO<sub>2</sub> supply and demand in urea, enhanced oil recovery (EOR), food and beverages, methanol, Power-to-Liquids (PTL) and others including carbonates etc. The following scope is covered:

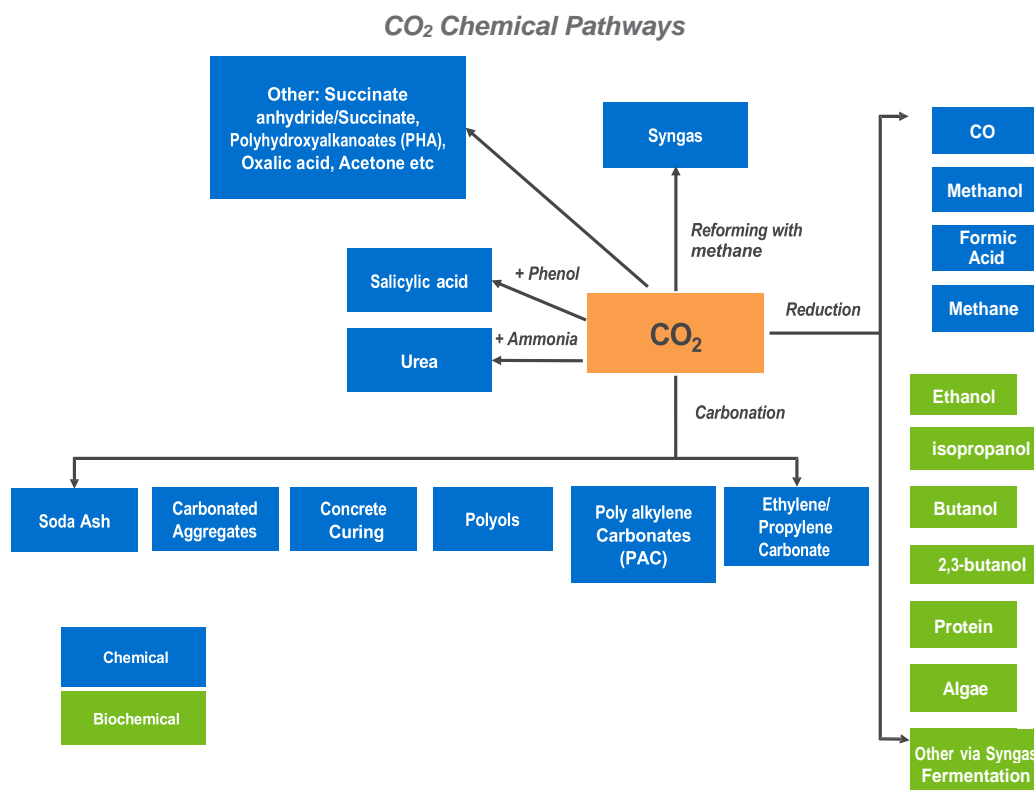
- Regulatory framework and development in major countries
- CO<sub>2</sub> Capture and Sequestration (CCS)
- CO<sub>2</sub> Utilization
- Market Outlook for nine regions: North America, South America, Western Europe, Central Europe, Eastern Europe, Middle East, Africa, China and Other Asia Pacific
- Carbon pricing discussions
- Competitiveness analysis of CO<sub>2</sub> derived chemicals including methanol and polycarbonate
- Forecast period: history to 2015 and forecast to 2035

Along with the written report, data is provided in Excel including market and competitiveness data

### Report Abstract:

Global CO<sub>2</sub> emissions in 2022 are estimated at 36.8 billion tons, according to the International Energy Agency (IEA). 40 percent is coming from power generation. Industry produces over 9 billion tons of direct CO<sub>2</sub> emissions in 2022 including the cement, iron and steel, chemicals and other sectors.

Global CO<sub>2</sub> demand landed at 234 million tons in 2022 and the market has a modest volume impact on reducing emissions, especially as some consumption releases CO<sub>2</sub> back into the atmosphere such as urea, enhanced oil recovery and food and beverage. However, development in utilizing CO<sub>2</sub> cannot be underestimated, particularly in chemical synthesis. Much progress has already been made in recent years in R&D for processes that could produce chemicals and polymers from CO<sub>2</sub>, instead of hydrocarbons, particularly in the production of methanol, synfuels via Power-to-Liquids (PTL) and carbonates including polyols, polycarbonates, and concrete manufacture. A cost competitiveness analysis is performed comparing conventional process against CO<sub>2</sub> based process for both methanol and polycarbonate that represent the typical chemistry from CO<sub>2</sub>.





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Chapter 7 Cost Competitiveness includes the following chemicals that represent the typical chemistry from CO<sub>2</sub>.

- Methanol
- Polycarbonate

The United States, Western Europe, and China are selected as the regions where these plants are for

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- Consultation time with the project team

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