

Abstract
Process Economics Report 237
CO₂ EMISSIONS REDUCTION
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CO₂ emissions from the combustion of fossil fuels are intimately involved with economic activity and development, since 90% of the world's energy needs are derived from fossil fuels. Concern about the potential consequences of rising levels of CO₂ and other greenhouse gases in the atmosphere is the driving force behind the Kyoto Protocol to the UN Framework Convention on Climate Change. The Protocol was approved by delegates in December 1997, but has not yet been ratified because it is highly controversial. It requires 38 industrialized nations to accept legally binding limits reducing a basket of six greenhouse gas emissions (of which CO₂ accounts for by far the major share) to an average of 5.2% below their 1990 emission levels by 2008-2012.

Regardless of the Protocol status, many companies have changed their focus in recent years from whether global warming is real, to how CO₂ and other greenhouse gas emissions can be reduced and how much it will cost. The issue will have a major impact on chemical and energy industry business strategies and investments, including energy efficiency improvements, support for renewable energy, development of carbon trading systems, and finding new methods to capture and dispose of CO₂. The industry is beginning to adopt those strategies with the best economic return which also reduce emissions.

This report surveys and evaluates a wide range of CO₂ business practices and mitigation technologies, since some approaches may be adapted by a unique industry, while other measures could be used across industries.

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