

The value chain of CO₂: an overview of the present technologies and perspectives of exploitation in the present industrial scenario

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The energy transition is nowadays a topic of huge attention, as a measure to face the climate change. In this framework, the production of carbon-based chemicals and fuels by exploiting anthropogenic CO₂ can be considered as a way-out to leave the traditional oil-based technology. In fact, renewable and green approaches to CO₂, considering it as a valuable raw material, are aimed at driving the transition to a new circular economy in chemistry and energy production, developing alternative energetic vectors, or organic molecules normally derived from fossil resources. In this framework, an overview of the technologies development in the CO₂ value chain at research level will be discussed, with foreseen exploitations at industrial level.