

GHG Neutral Chemical Industry by 2050 – Fact or Fiction?

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The chemical industry represents a highly energy-intensive sector and is essentially based on carbon sources for the production of most base chemicals and intermediates.

“Decarbonisation” is not an option for the chemical industry and, as production relies to a large extent on fossil feedstock, substantial CO₂ emissions are caused.

CCU, power-to-X technologies, the use of biomass as feedstock and recycling of carbon-materials to close the carbon cycle offer alternative pathways towards GHG neutral chemical production. Based on a recently published study “Roadmap Chemie 2050” by DECHEMA and Futurecamp, this paper describes technology options for achieving a GHG neutral chemical industry, but also highlights and quantifies the huge barriers and requirements for realising this vision, e.g. in terms of energy consumption and investments. How can we get to a consensus on realistic ambitions without compromising the European Chemical Industry at large?