

Defossilizing the Chemical Industry by Renewable Methanol

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Abstract

Due to the energy transition and the geopolitical situation the chemical industry in Europe is facing huge challenges to compete on the global market. Oil rich countries are investing heavily in Crude to Chemicals and countries with large natural gas reserves are enjoying low costs and reduce emissions by shifting to methanol and ammonia production with CCS. At the same time the European Commission has the ambition to create a competitive and sustainable industry in Europe enabling a Net Zero Emission and Circular Society by 2050.

This presentation will focus on the opportunity of using renewable methanol from mixed plastic waste, lignocellulosic biomass and CO₂ as a feedstock to produce chemicals and polymers. Next to greening the existing naphtha steam cracking assets by electrification and renewable feedstocks (bio-naphtha and pyrolysis oil), the Methanol to Olefins (MTO) process offers an alternative route to produce defossilized olefins (ethylene and propylene) from renewable methanol feedstocks. Opportunities and challenges of building a MTO production facility in Europe will be discussed.