

IEA Bioenergy Task 42

Biorefineries in a future BioEconomy

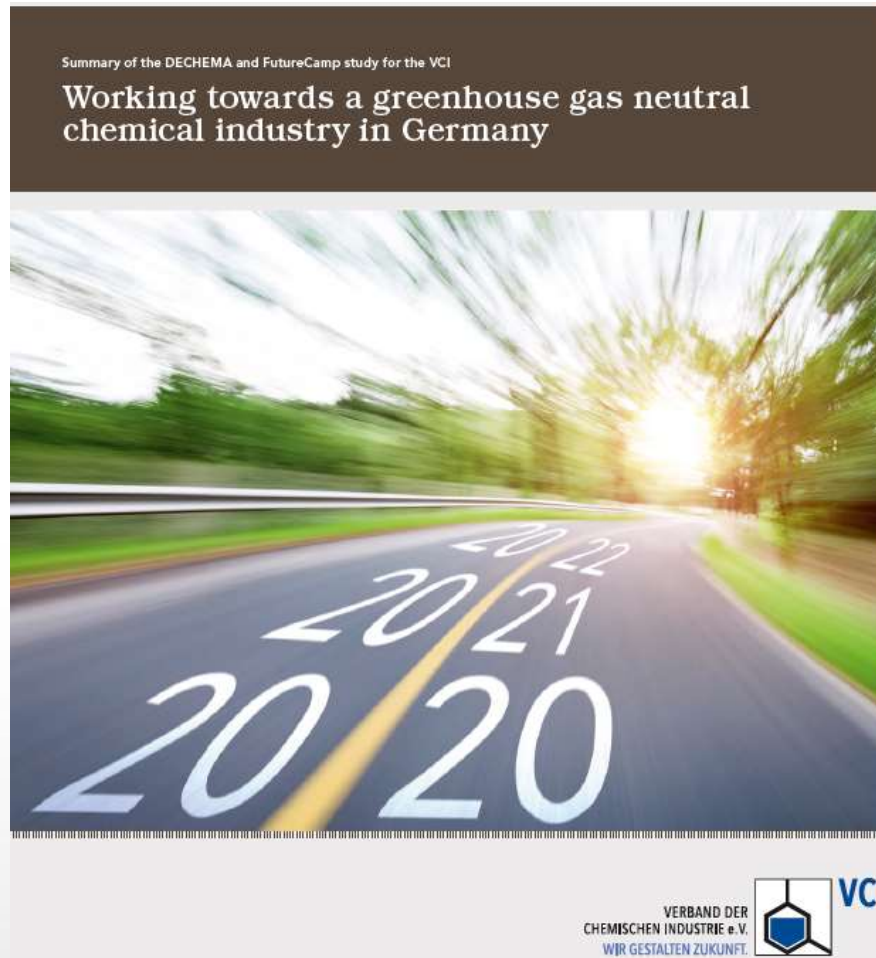
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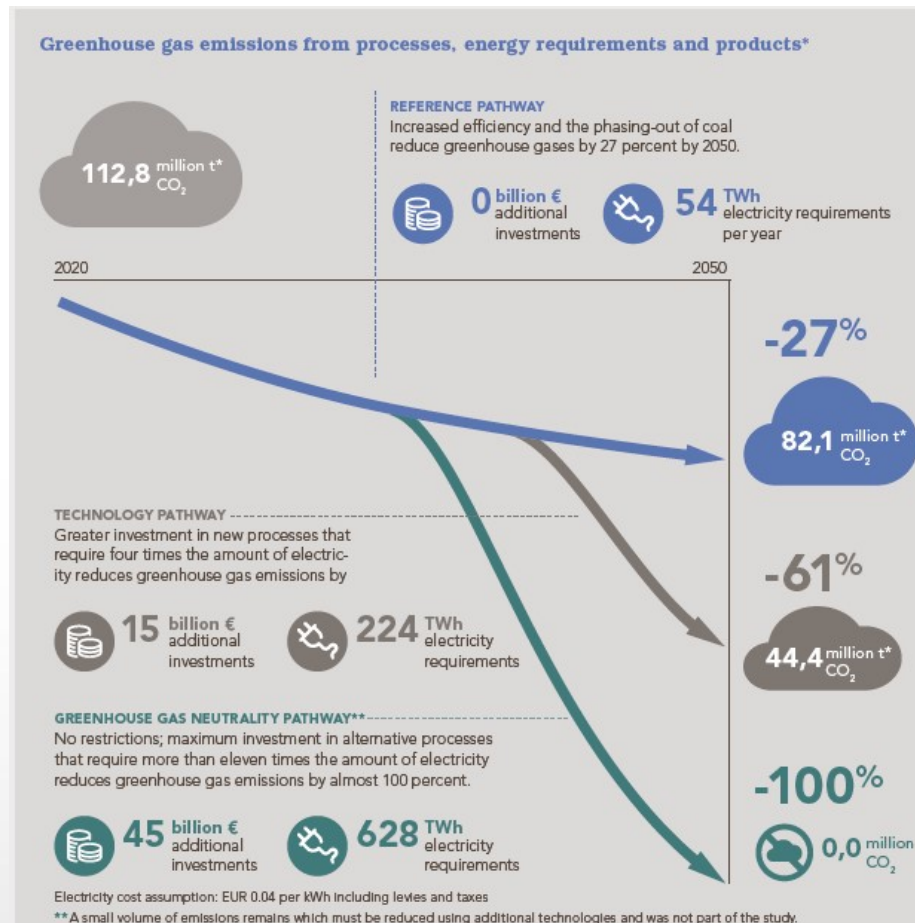
19. - 21. 11.2019

Chemical industry in Germany -outlook



<https://www.vci.de/services/publikationen/broschueren-faltblaetter/vci-dechema-futurecamp-studie-roadmap-2050-treibhausgasneutralitaet-chemieindustrie-deutschland-langfassung.jsp?fsID=66577>

Scenarios - stepwise



Technology portfolio

TECHNOLOGY PORTFOLIO

for the technology pathway and the greenhouse gas neutrality pathway

ELECTRICITY-BASED PROCESSES

- Methanol from electrolytic hydrogen and CO₂
- Ammonia and urea from electrolytic H₂ and CO₂
- Electrically heated cracking
- Electrically heated steam reforming
- Synthetic naphtha/methane from electrolytic H₂ and CO₂

ALTERNATIVE RAW MATERIALS/PROCESSES

- Chemical recycling of plastics (pyrolysis, gasification, depolymerization)
- Thermo-catalytic biomass conversion into BTX
- Synthetic naphtha/methane from biomass
- Co-firing with biomass
- Methane pyrolysis

DOWNSTREAM PROCESSES

- Ethylene/propylene via methanol-to-olefins (MtO)
- BTX via methanol-to-aromatics (MtA)
- Olefins from synthetic naphtha and cracking
- Olefins from synthetic methane + oxidative coupling of methane

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