

WE OFFER

# BACHELOR/PROJECT-THESIS

In the field of CCU (CO<sub>2</sub> capture and utilization)

**Title:**

„Energy and techno-economic-based research to select the best downstream product for methanol“

**Background:**

This thesis is associated with the DirectCCE project, which aims to investigate a system for capturing CO<sub>2</sub> and utilizing it to produce value-added products, including methanol. About two-thirds of methanol is used to produce other chemicals, such as formaldehyde and acetic acid. Therefore, it is particularly significant to focus on these end products to make the CCU pathway more competitive in the current market from an economic perspective. The primary goal of this thesis is to gather and analyze data on various potential end products, including their energy efficiency in production from methanol, market size, and levelized cost. These parameters are essential for simulating the proposed CCU pathway to make it more competitive in the current market.

Investigating different end products can help identify the most effective scenarios for the CCU technologies.

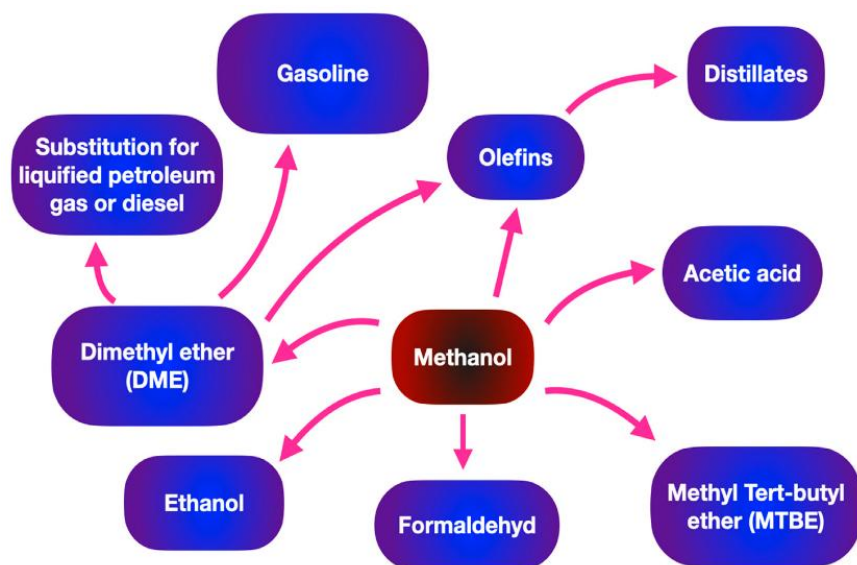
**Outline of the content:**

- Literature review of different end products
- Gathering data for the system
- Graphical visualization and discussion
- Written documentation of the project
- Stating expected outcomes

**Requirements:**

- Data analysis skills
- Motivation to Solve Complex Problems
- Showing interest in CCU technologies

**Work Load:** ca. 4 months (BA,PJ)



[1] Yahyazadeh, A.; Nanda, S.; Dalai, A.K. A Critical Review of the Sustainable Production and Application of Methanol as a Biochemical and Bioenergy Carrier. *Reactions* 2024, 5, 1-19. <https://doi.org/10.3390/reactions5010001>

**You are interested? Please contact:**

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