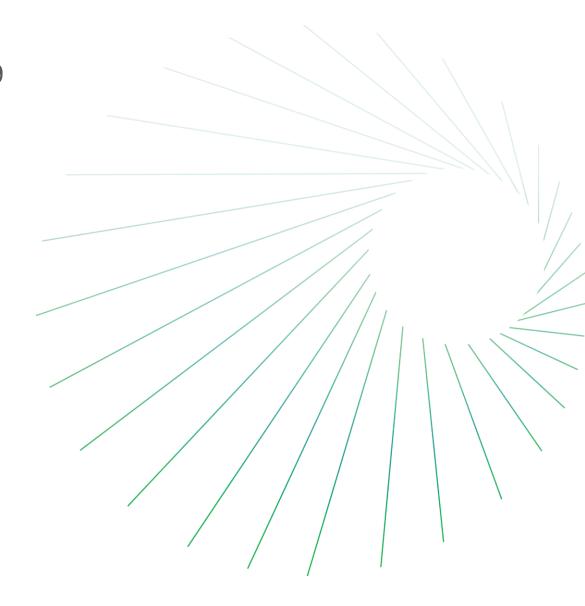


DMTE Technology

(Syngas to methyl acetate and/ or ethanol)

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DMTE Technology: Syngas to methyl acetate and/ or ethanol

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Abstract

Yanchang Zhongke (Dalian) Energy Technology Co., Ltd. was established in January 2017 in the city Dalian, Liaoning, China. The key stakeholders of the company are Shaanxi Yanchang Petroleum (Group) Corp. Ltd. and Dalian Institute of Chemical Physics, Chinese Academy of Sciences (DICP). To answer the need of China's ethanol fuel program, the company is licensing newly developed route to produce ethanol from syngas. This technology is their DMTE technology. DMTE stands for

D - DME/DICP/Double,

M - Methanol,

T - to,

E - Ethanol/Ethylene.

The company successfully commissioned 100,000 metric tons per year capacity anhydrous ethanol plant from coal in China in January 2017. The company has aggressive plan to sell this technology in market with different portfolio of chemicals under their technology basket. This PEP review evaluates two aspects of DMTE technology taking syngas as a feedstock:

- 1. Production economics for methyl acetate
- 2. Production economics for ethanol

The economics of producing methyl acetate directly from syngas shows highly favorable results due to higher methyl acetate price in market as compared to ethanol. We see some challenges for ethanol production economics mainly because of high-fixed and operating cost involved in distilling azeotropic components. This makes the conventional routes of producing anhydrous ethanol dominant in the prevailing ethanol market price. But there is a window where the production economics can be reduced by adjusting the proportions of methyl acetate, ethanol, and methanol according to the market demand to improve the flexibility of products. This has important realistic sense for developing new coal chemical industry.

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