

Feasibility study of Integrated Conversion of Coke Oven Gas (COG) and Lintz Donawitz Gas (LDG) into Methanol

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Utilizing byproduct gas from steel mill has been studied for their potential value as a resource. While many process researchers have focused on using coke oven gas (COG) as a resource, the feasibility of utilizing Linz Donawitz gas (LDG) has rarely been considered despite its carbon content.

Therefore, the purpose of this study is to propose process which can efficiently convert two gases to methanol. In this study, two processes, notated as COG-PSA and COG-SMR are designed. In COG-PSA process, hydrogen gas is extracted from PSA and merged to LDG. In COG-SMR process, on the other hand, COG is reformed to syngas and merged to LDG.

Techno-economics is analyzed and compared using minimum selling price and their sensitivity on operation price is studied for alternative case study.