

ABSTRAK

Pabrik pembuatan *Methanol* dengan kapasitas 100.000 ton/tahun direncanakan berdiri pada tahun 2029 di Kecamatan Cilegon, Cilegon, Banten yang diperkirakan luas area 4,5 Ha. Proses produksi *methanol* mengacu pada U.S Patent 2023/11718575 B2, dimana proses yang digunakan merupakan proses *dry reforming of methane* menggunakan bahan baku *methane* sebanyak 3.512,1059 kg/jam, CO₂ sebanyak 9.663,4585 kg/jam.

Pabrik yang akan didirikan ini merupakan perusahaan berbentuk Perseroan Terbatas (PT) dengan struktur organisasi *line and staff* yang dipimpin oleh direktur utama dengan jumlah karyawan sebanyak 196 orang. Berdasarkan hasil Analisa ekonomi, pabrik *methanol* ini layak didirikan karena telah memenuhi persyaratan parameter ekonomi, yaitu:

- | | | |
|----|---|-----------------------|
| a. | <i>Annual Cash Flow (ACF)</i> | = US\$ 18.541.136,93 |
| b. | NPOTLP | = US\$ 192.479.796,20 |
| c. | <i>Total Capital Sink (TCS)</i> | = US\$ 183.008.856,12 |
| d. | <i>Rate of Return on Investment (ROR)</i> | = 88,3330 % |
| e. | <i>Rate of Return based on Discounted Cash Flow (DCF)</i> | = 10,9690 % |
| f. | <i>Break Even Point (BEP)</i> | = 39,5299 % |
| g. | <i>Pay Out Time (POT)</i> | = 0,9866 tahun |
| h. | <i>Service Life</i> | = 11 tahun |

Kata Kunci : *Methanol. Dry Reforming of Methane, Ni/Al₂O₃, Cu/ZnO/Al₂O₃,*

Fixed Bed Reactor, Dephlegmator

ABSTRACT

A methanol plant with a capacity of 100,000 tons/year is planned to be established in 2029 in Cilegon District, Cilegon, Banten, with an estimated land area of 4.5 hectares. The methanol production process refers to U.S. Patent 2023/11718575 B2, which applies the dry reforming of methane process using methane as the feedstock at 3,512.1059 kg/h and CO₂ at 9,663.4585 kg/h.

The plant will be established as a Limited Liability Company (PT) with a line and staff organizational structure, led by a president director and employing 196 personnel. Based on the economic analysis, the methanol plant is feasible to be established since it meets the requirements of the economic parameters, namely:

<i>a. Annual Cash Flow (ACF)</i>	<i>= US\$ 18.541.136,93</i>
<i>b. Net Present Value at the End of Project Life (NPOTLP)</i>	<i>= US\$ 192.479.796,20</i>
<i>c. Total Capital Sink (TCS)</i>	<i>= US\$ 183.008.856,12</i>
<i>d. Rate of Return on Investment (ROR)</i>	<i>= 88,3330%</i>
<i>e. Rate of Return based on Discounted Cash Flow (DCF)</i>	<i>= 10,9690%</i>
<i>f. Break Even Point (BEP)</i>	<i>= 39,5299%</i>
<i>g. Pay Out Time (POT)</i>	<i>= 0,9866 years</i>
<i>h. Service Life</i>	<i>= 11 years</i>

Keywords: *Methanol, Dry Reforming of Methane, Ni/Al₂O₃, Cu/ZnO/Al₂O₃, Fixed Bed Reactor, Dephlegmator*