

ABSTRAK
PRARANCANGAN PABRIK BIODIESEL
DARI *REFINED, BLEACHED AND DEODORIZED PALM OIL* (RBDPO)
DENGAN KAPASITAS 150.000 TON/TAHUN
(Tugas Khusus Perancangan Menara Distilasi (MD-304))

Oleh
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Biodiesel secara umum merupakan ester monoalkil dari minyak nabati dan hewani. Minyak yang berasal dari tumbuhan dan lemak hewan serta turunannya memiliki kemungkinan sebagai pengganti bahan bakar diesel. Biodiesel dihasilkan melalui proses transesterifikasi minyak atau lemak dengan alkohol. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, *cooling water*, sistem penyediaan udara tekan, sistem pembangkit tenaga listrik, dan sistem pembakaran gas.

Kapasitas produksi pabrik direncanakan 150.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di daerah Kotawaringin Barat, Kalimantan Tengah. Tenaga kerja yang dibutuhkan sebanyak 137 orang dengan bentuk badan usaha Perseroan Terbatas (PT) yang dipimpin oleh seorang Direktur Utama yang dibantu oleh Direktur Produksi dan Direktur Keuangan dengan struktur organisasi *line and staff*.

Dari analisis ekonomi, diperoleh :

<i>Fixed Capital Investment</i> (FCI)	= Rp3.478.895.958.808
<i>Working Capital Investment</i> (WCI)	= Rp386.543.995.423
<i>Total Cost Investment</i> (TCI)	= Rp3.865.439.954.232
<i>Break Event Point</i> (BEP)	= 31,98%
<i>Shut Down Point</i> (SDP)	= 27,09%
<i>Pay Out Time after Taxes</i> (POT) _a	= 2,98 tahun
<i>Return on Investment before taxes</i> (ROI) _b	= 26,47%
<i>Return on Investment after taxes</i> (ROI) _a	= 21,17%
<i>Discounted Cash Flow</i> (DCF)	= 16,23%

Mempertimbangkan rangkuman di atas, sudah selayaknya pendirian pabrik Biodiesel ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.

ABSTRACT
PRE-DESIGN OF A BIODIESEL PLANT
FROM REFINED, BLEACHED AND DEODORIZED PALM OIL (RBDPO)
WITH A CAPACITY 150.000 TON/YEAR
(Distillation Coloum Design(MD-304))

By
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Biodiesel is generally a monoalkyl ester of vegetable and animal oils. Oils derived from plants, animal fats, and their derivatives have potential as a substitute for diesel fuel. Biodiesel is produced through the transesterification of oil or fat with alcohol. The required plant utilities include water treatment and supply systems, cooling water systems, dry air supply systems, power generation systems, and gas combustion systems.

The plant production capacity is planned for 150,000 tons per year with a 330 days annually. The plant is planned to be located in West Kotawaringin, Central Kalimantan. The workforce requirement is 137 employees. The business entity will be established as a Limited Liability Company (PT), led by a President Director, assisted by a Production Director and a Finance Director, with an organizational structure based on the line-and-staff model..

From the economic analysis, the following results were obtained :

<i>Fixed Capital Investment (FCI)</i>	= Rp3.478.895.958.808
<i>Working Capital Investment (WCI)</i>	= Rp386.543.995.423
<i>Total Cost Invesment (TCI)</i>	= Rp3.865.439.954.232
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Considering the summary above, the establishment of this biodiesel plant deserves further evaluation, as it is a profitable project with strong future prospects.