

ABSTRAK

PRARANCANGAN PABRIK METIL ISOBUTIL KETON (C₃H₆O) DARI ASETON (C₃H₆O) DAN HIDROGEN (H₂) KAPASITAS 32.000 TON/TAHUN

Oleh

MUHAMMAD TAUFAN KAMAL

Pabrik Metil Isobutil Keton berbahan baku aseton dan hidrogen, akan didirikan di Cilegon Banten. Pabrik ini berdiri dengan mempertimbangkan ketersediaan bahan baku, sarana transportasi yang memadai, tenaga kerja yang mudah didapatkan dan kondisi lingkungan.

Pabrik direncanakan memproduksi metil isobutil keton sebanyak 32.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah aseton sebanyak 9.120,8777 kg/jam dan hidrogen sebanyak 587,9016 kg/jam.

Penyediaan kebutuhan utilitas pabrik metil isobutil keton berupa: pengadaan air, pengadaan *steam*, pengadaan listrik, kebutuhan bahan bakar, dan pengadaan udara kering.

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 134 orang.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 250.631.916.411
<i>Working Capital Investment</i>	(WCI)	= Rp 44.229.161.720
<i>Total Capital Investment</i>	(TCI)	= Rp 294.861.078.131
<i>Break Even Point</i>	(BEP)	= 41,97 %
<i>Shut Down Point</i>	(SDP)	= 30,82 %
<i>Pay Out Time before taxes</i>	(POT) _b	= 1,75 years
<i>Pay Out Time after taxes</i>	(POT) _a	= 2,09 years
<i>Return on Investment before taxes</i>	(ROI) _b	= 39,98 %
<i>Return on Investment after taxes</i>	(ROI) _a	= 31,98 %
<i>Discounted cash flow</i>	(DCF)	= 45,24 %

Mempertimbangkan paparan di atas, sudah selayaknya pendirian pabrik metil isobutil keton ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai masa depan yang baik.

ABSTRACT

MANUFACTURE OF METHYL ISOBUTYL KETONE (C₃H₆O) FROM ACETONE (C₃H₆O) AND HYDROGEN (H₂) CAPACITY 32.000 TONS/YEAR (Design Reactor -201 (RE-201))

By

MUHAMMAD TAUFAN KAMAL

Methyl Isobutyl Ketone plant produced by reacting acetone and hydrogen was plan to be in industrial plant in the region of Cilegon in Banten Province. Plant was established by considering the availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Plant's production capacity is planned 32,000 tons / year, with operating time of 24 hours / day and 330 working days in a year. The raw materials used are much acetone 9120.8777 kg / hr and hydrogen as 587.9016 kg / hr.

Provision of utility plant needs a treatment system and water supply, steam supply systems, instrument air supply systems, and power generation systems.

Labor needed as many as 134 people with a business entity form Limited Liability Company (PT) which is headed by a Director who is assisted by the Director of Production and Director of Finance with line and staff organizational structure.

From the economic analysis is obtained:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 250.631.916.411
<i>Working Capital Investment</i>	(WCI)	= Rp 44.229.161.720
<i>Total Capital Investment</i>	(TCI)	= Rp 294.861.078.131
<i>Break Even Point</i>	(BEP)	= 41,97 %
<i>Shut Down Point</i>	(SDP)	= 30,82 %
<i>Pay Out Time before taxes</i>	(POT) _b	= 1,75 years
<i>Pay Out Time after taxes</i>	(POT) _a	= 2,09 years
<i>Return on Investment before taxes</i>	(ROI) _b	= 39,98 %
<i>Return on Investment after taxes</i>	(ROI) _a	= 31,98 %
<i>Discounted cash flow</i>	(DCF)	= 45,24 %

Consider the summary above, it is proper establishment of methyl isobutyl ketone plant to studied further, because the plant is profitable and has good prospects.