

ABSTRACT

MANUFACTURE OF MONOBASIC POTASSIUM PHOSPHATE FROM PHOSPHORIC ACID AND POTASSIUM HYDROXIDE

CAPACITY 30.000 TONS/YEAR

(Design of Cooling Tank (CT-301))

By:

FAIZ MUNA AZZAHRA PRADANTA

Design of Monobasic Potassium Phosphate plant made from Phosphoric Acid and Potassium Hydroxide, is planned to be established in Surabaya, Jawa Timur. The establishment of the factory is based on consideration of the availability of raw materials, process support units, adequate transportation, easily available labor, and strategic environmental conditions. The plant is planned to produce 30,000 tons of Monobasic Potassium Phosphate/year, with an operating time of 24 hours/day, for 300 days/year. The raw material used is Phosphoric Acid as much as 2.755,322 kg/hour and Potassium Hydroxide as much as 1577,281 kg/hour. The provision of factory utility needs consists of water supply units, air supply, electricity supply units, and sewage treatment units.

The form of the company is a Limited Liability Company (Ltd) using a line and staff company organizational structure with a total of 179 workers.

From economic analysis, it is obtained that:

Fixed Capital Investment	(FCI)	= Rp 624.672.379.569,516
Working Capital Investment	(WCI)	= Rp 110.236.302.276,973
Total Capital Investment	(TCI)	= Rp 734.908.681.846,490
Break Even Point	(BEP)	= 41 %
Shut Down Point	(SDP)	= 27 %
Pay Out Time before taxes	(POT) _b	= 1,62 years
Pay Out Time after taxes	(POT) _a	= 1,95 years
Return on Investment before taxes	(ROI) _b	= 44 %
Return on Investment after taxes	(ROI) _a	= 35 %
Discounted cash flow	(DCF)	= 58,02 %

Considering the explanation above, it is appropriate for the establishment of a Monobasic Potassium Phosphate plant to be studied further, because it has high profits in the future.

ABSTRAK

PRARANCANGAN PABRIK *MONOBASIC POTASSIUM PHOSPHATE* DARI ASAM FOSFAT DAN POTASSIUM HIDROKSIDA KAPASITAS 30.000 TON/TAHUN

(Tugas Khusus Perancangan *Cooling Tank* (CT-301))

Oleh:

FAIZ MUNA AZZAHRA PRADANTA

Prarancangan Pabrik *Monobasic Potassium Phosphate* berbahan baku Asam Fosfat dan Potassium Hidroksida, akan didirikan di Surabaya, Jawa Timur. Pendirian pabrik ini berdasarkan atas pertimbangan ketersediaan bahan baku, daerah pemasaran, sarana transportasi yang memadai, tenaga kerja yang mudah didapatkan dan kondisi lingkungan yang strategis. Pabrik direncanakan memproduksi *Monobasic Potassium Phosphate* sebanyak 30.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah Asam Fosfat sebanyak 2.755,322 kg/jam dan Potassium Hidroksida sebanyak 1577,281 kg/jam. Penyediaan kebutuhan utilitas pabrik *Monobasic Potassium Phosphate* berupa pengadaan air, pengadaan listrik, kebutuhan bahan bakar, pengadaan udara kering dan pengadaan udara instrumentasi.

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 179 orang.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 624.672.379.569,516
<i>Working Capital Investment</i>	(WCI)	= Rp 110.236.302.276,973
<i>Total Capital Investment</i>	(TCI)	= Rp 734.908.681.846,490
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<i>Return on Investment before taxes</i>	(ROI) _b	= 44 %
<i>Return on Investment after taxes</i>	(ROI) _a	= 35 %
<i>Discounted cash flow</i>	(DCF)	= 58,02 %

Mempertimbangkan paparan di atas, sudah selayaknya pendirian pabrik *Monobasic Potassium Phosphate* ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai masa depan yang baik.