

ABSTRAK

PRARANCANGAN PABRIK MAGNESIUM OKSIDA (MgO) DARI DOLOMIT ($\text{CaMg}(\text{CO}_3)_2$) KAPASITAS 55.000 TON/TAHUN (Perancangan *Rotary Kiln* (RK-101))

Oleh

Tresya Rikherwan

Pabrik Magnesium Oksida berbahan baku mineral dolomit, direncanakan didirikan di Gresik, Jawa Timur. Pendirian pabrik berdasarkan atas pertimbangan ketersediaan bahan baku, sarana transportasi yang memadai, tenaga kerja yang mudah didapatkan dan kondisi lingkungan.

Pabrik direncanakan memproduksi Magnesium Oksida sebanyak 55.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah Mineral Dolomit sebanyak 31.257,467

Penyediaan kebutuhan utilitas pabrik terdiri dari unit pengadaan air, pengadaan *steam*, pengadaan udara instrument, pengadaan listrik, bahan bakar coal mill dan pengolahan limbah.

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 167 orang.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	=	Rp. 342.740.489.508,-
<i>Working Capital Investment</i>	(WCI)	=	Rp. 60.483.615.795,-
<i>Total Capital Investment</i>	(TCI)	=	Rp. 403.224.105.304,-
<i>Break Even Point</i>	(BEP)	=	42,82%
<i>Shut Down Point</i>	(SDP)	=	28,89%
<i>Pay Out Time before taxes</i>	(POT) ^b	=	3,16 tahun
<i>Pay Out Time after taxes</i>	(POT) ^a	=	4,63 tahun
<i>Return on Investment before taxes</i>	(ROI) ^b	=	49,89%
<i>Return on Investment after taxes</i>	(ROI) ^a	=	39,92%
<i>Discounted cash flow</i>	(DCF)	=	47,71%

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

ABSTRACT

MANUFACTURING OF MAGNESIUM OXIDE (MgO) FROM DOLOMITE ($\text{CaMg}(\text{CO}_3)_2$) WITH CAPACITY 55.000 TONS/YEAR (Design of Rotary Kiln (RK-101))

By

TRESYA RIKHERWAN

Magnesium Oxide plant with raw materials, mineral dolomite is planned to be built in Gresik, Jawa Timur. Establishment of this plant is based on some consideration due to the raw material resources, the transportation, the labors availability and also the environmental condition.

This plant is meant to produce 55,000 tons/year with 330 working days in a year. The raw materials used consist of 31.257,467 kg/hour of mineral dolomite. The utility units consist of water supply system, steam supply system, instrument air supply system, power generation system, unit coal mill and waste treatment system.

The business entity form is Limited Liability Company (Ltd) using line and staff organizational structure with 167 labors.

From the economic analysis, it is obtained that:

Fixed Capital Investment	(FCI)	=	Rp.	342.740.489.508,-
Working Capital Investment	(WCI)	=	Rp.	60.483.615.795,-
Total Capital Investment	(TCI)	=	Rp.	403.224.105.304,-
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Considering the summary above, it is proper to study the establishment of Magnesium Oxide plant further, because the plant is profitable and has good prospects.