

ABSTRACT

MANUFACTURING OF GLYPHOSATE FROM NEOPHOSPHONOMETHYL IMINODIACETIC ACID (N-PMIDA) AND HYDROGEN PEROXIDE (H₂O₂) WITH CAPACITY 30.000 TONS/YEAR (Design of Crystallizer (CR-201))

By

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Glyphosate plant with materials, Neophosphonomethyl Iminodiacetic Acid (N-PMIDA) and Hydrogen Peroxide (H₂O₂) is planned to be built in Gresik, East Java. 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 30.000 tons/year Glyphosate with operation time 24 hour/day, 330 hour/year. Raw materials used consist of Neophosphonomethyl Iminodiacetic Acid (N-PMIDA) 5272,395 Kg/hour and 789,6979 Kg/hour of Hydrogen Peroxide.

The utility units consist of water supply system, heating oil supply system, utility units, instrument air supply system, refrigerant supply system and waste treatment system.

The bussines entity form is Limited Liability Company (Ltd) using line and staff organizational structure with 149 labors.

From the economic analysis, it is obtained that:

<i>Fixed Capital Investment</i>	(FCI)	=	Rp. 2.503.657.178.078,-
<i>Working Capital Investment</i>	(WCI)	=	Rp. 469.435.720.890,-
<i>Total Capital Investment</i>	(TCI)	=	Rp. 2.973.092.898.967,-
<i>Break Even Point</i>	(BEP)	=	43,05%
<i>Shut Down Point</i>	(SDP)	=	28,93%
<i>Pay Out Time before taxes</i>	(POT) _b	=	2,63 tahun
<i>Pay Out Time after taxes</i>	(POT) _a	=	3,09 tahun
<i>Return on Investment before taxes</i>	(ROI) _b	=	22,36%
<i>Return on Investment after taxes</i>	(ROI) _a	=	17,89%
<i>Discounted cash flow</i>	(DCF)	=	17,61%

Considering the summary above, it is proper to study the establishment of Glyphosate plant further, because the plant is profitable and has good prospects.

ABSTRAK

PRARANCANGAN PABRIK *GLYPHOSATE* DARI *NEOPHOSPHONOMETHYL IMINODIACETIC ACID* (N-PMIDA) DAN HIDROGEN PEROKSIDA (H₂O₂) DENGAN KAPASITAS 30.000 TON/TAHUN (Perancangan *Crystallizer* (CR-201))

Oleh

AJENG AYU PUSPASARI

Pabrik *Glyphosate* berbahan baku *Neophosphonomethyl Iminodiacetic Acid* (N-PMIDA) Dan Hidrogen Peroksida (H₂O₂) 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 *Glyphosate* sebanyak 30.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah *Neophosphonomethyl Iminodiacetic Acid* (N-PMIDA) sebanyak 5.272,395 Kg/jam dan Hidrogen Peroksida (H₂O₂) sebanyak 789,6979 Kg/jam.

Penyediaan kebutuhan utilitas pabrik terdiri dari unit pengadaan air, pengadaan *heating oil*, pengadaan udara *instrument*, pengadaan *refrigerant*, dan pengolahan limbah.

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 149 orang.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	=	Rp. 2.503.657.178.078,-
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Mempertimbangkan paparan di atas, sudah selayaknya pendirian pabrik *Glyphosate* ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai masa depan yang baik.