

ABSTRAK

PRARANCANGAN PABRIK BIOPLASTIK DARI PATI SORGUM DAN GLISEROL KAPASITAS 45.000 TON/TAHUN (Perancangan Reaktor (RE-201))

Oleh

Dwi Lisna Agustin

Pabrik Bioplastik berbahan baku pati sorgum dan asetat anhidrat, direncanakan didirikan di Pasuruan, 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 Bioplastik sebanyak 45.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah pati sorgum sebanyak 83.193,91 kg/jam dan vinil asetat sebanyak 283,14 kg/jam.

Penyediaan kebutuhan utilitas pabrik terdiri dari unit pengadaan air, pengadaan udara instrument, pengadaan listrik dan pengolahan limbah.

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 186 orang.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	=	Rp. 573.672.586.908,-
<i>Working Capital Investment</i>	(WCI)	=	Rp. 101.236.338.866,-
<i>Total Capital Investment</i>	(TCI)	=	Rp. 674.908.925.774,-
<i>Break Even Point</i>	(BEP)	=	45,329%
<i>Shut Down Point</i>	(SDP)	=	22,435%
<i>Pay Out Time before taxes</i>	(POT) ^b	=	2,4 tahun
<i>Pay Out Time after taxes</i>	(POT) ^a	=	3,83 tahun
<i>Return on Investment before taxes</i>	(ROI) ^b	=	26,919%
<i>Return on Investment after taxes</i>	(ROI) ^a	=	21,536%
<i>Discounted cash flow</i>	(DCF)	=	19,69%

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

ABSTRACT

MANUFACTURING OF BIOPLASTIC FROM SORGHUM STARCH AND GLYSEROL WITH CAPACITY 45.000 TONS/YEAR (Design of Reactor (RE-201))

By

DWI LISNA AGUSTIN

Bioplastic plant with raw materials, sorghum starch and acetic anhydride is planned to be built in Pasuruan, 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 45,000 tons/year with 330 working days in a year. The raw materials used consist of 83.193,91 kg/hour of sorghum and 283,14 kg/hour of vinyl acetate.

The utility units consist of water supply system, instrument air supply system, power generation system and waste treatment system.

The bussines entity form is Limited Liability Company (Ltd) using line and staff organizational structure with 186 labors.

From the economic analysis, itis obtained that:

<i>Fixed Capital Investment</i>	(FCI)	=	Rp. 573.672.586.908,-
<i>Working Capital Investment</i>	(WCI)	=	Rp. 101.236.338.866,-
<i>Total Capital Investment</i>	(TCI)	=	Rp. 674.908.925.774,-
<i>Break Even Point</i>	(BEP)	=	45,329%
<i>Shut Down Point</i>	(SDP)	=	22,435%
<i>Pay Out Time before taxes</i>	(POT) _b	=	2,4years
<i>Pay Out Time after taxes</i>	(POT) _a	=	3,83years
<i>Return on Investment before taxes</i>	(ROI) _b	=	26,919%
<i>Return on Investment after taxes</i>	(ROI) _a	=	21,536%
<i>Discounted cash flow</i>	(DCF)	=	19,69%

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