

ABSTRACT

MANUFACTURING OF STIRENE FROM ETHYLBENZENE CAPACITY 50.000 TONS/YEAR (Design of Reactor-201(RE-201))

By

NUR KHASANAH

Stirene is one of the product industry chemicals are used as the raw materials for *polystirene, Acrylonitrile Butadiene Styrene (ABS) dan StyreneButadiena Latex (SBL), StyreneButadiena Rubber(SBR), dan Unsaturated Polyester Resin (UPR)*. Stirene can be produced by some of the process is Process of dehydrogenation etilbenzene and Procces oxidation etilbenzene. Provision of utility plant needs a treatment system and water supply, cooling water, ,dan Generator electrical power system.

Capacity of the plant is planned to production acrylonitrile is 50.000 tons/year with 330 working days in a year. The location of plant is planned in Cilegon, Banten. Labor needed in this plant as many as 135 people with a business entityform Limited Liability Company (PT) with line and staff organizational structure.

From teh economic analysis is obtained :

<i>Fixed Capital Investment</i>	(FCI) =Rp710.737.275.221
<i>Working Capital Investment</i>	(WCI) =Rp125.424.225.039
<i>Total Capital Investment</i>	(TCI) = Rp836.161.500.260
<i>Break Even Point</i>	(BEP) =41,41%
<i>Shut Down Point</i>	(SDP) = 27,26%
<i>Pay Out Time before taxes</i>	(POT) _b = 2,5years
<i>Pay Out Time after taxes</i>	(POT) _a =2,7years
<i>ReturnonInvestmentbefore taxes</i>	(ROI) _b = 51,77%
<i>ReturnonInvestment after taxes</i>	(ROI) _a = 41,42%
<i>Discounted cash flow</i>	(DCF) = 53,2%

By considering above the summary, it is proper establishment of stirene plant for studied further, because the plant is profitable andhas good prospects future.

ABSTRAK

PRARANCANGAN PABRIK STIRENA DARI ETILBENZEN KAPASITAS 50.000 TON/TAHUN (Perancangan Reaktor-201 (RE-201))

Oleh

NUR KHASANAH

Stirena merupakan salah satu produk industri kimia yang digunakan sebagai bahan baku pembuatan *polystyrene*, *Acrylonitrile Butadiene Styrene* (ABS) dan *Styrene Butadiene Latex* (SBL), *Styrene Butadiene Rubber* (SBR), dan *Unsaturated Polyester Resin* (UPR). Stirena dapat diproduksi dengan beberapa proses yaitu proses Dehidrogenasi etilbenzen dan proses Oksidasi etilbenzen. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem penyediaan *steam*, *cooling water*, dan sistem pembangkit tenaga listrik.

Kapasitas produksi pabrik stirena direncanakan 50.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di daerah Cilegon, Banten. Tenaga kerja yang dibutuhkan sebanyak 135 orang dengan bentuk badan usaha Perseroan Terbatas (PT) dengan struktur organisasi *line and staff*.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI) = Rp710.737.275.221
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Berdasarkan beberapa paparan di atas, maka pendirian pabrik Stirena ini layak untuk dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dari sisi ekonomi dan mempunyai prospek yang relatif cukup baik.