

ABSTRAK

PRARANCANGAN PABRIK PROPENA (PROPILEN) DARI LPG DENGAN METODE DEHIDROGENASI PROPANA BERKAPASITAS 100.000 TON/TAHUN (Perancangan *Distillation Column 1* (DC – 401)) OLEH

NURUL IZZATI HANIFAH

Pabrik propen diproduksi dari LPG propan akan didirikan di Gresik, Jawa Timur. Lokasi dipilih didasarkan pada pertimbangan ketersediaan bahan baku, fasilitas transportasi, tenaga kerja yang tersedia, dan kondisi lingkungan.

Pabrik akan memproduksi 100.000 ton/tahun propen dengan waktu operasi 24 jam/hari dan 330 hari/tahun. Jumlah bahan baku LPG yang dibutuhkan adalah 35,371.3248 kg/jam. Utilitas yang dibutuhkan adalah air, *steam*, listrik, refrigerasi, dan udara tekan.

Bentuk manajemen yang digunakan adalah Perseroan Terbatas (PT) dengan bentuk organisasi berupa *line and staff* dan memperkerjakan 195 orang.

Hasil analisis ekonomi adalah sebagai berikut:

<i>Fixed Capital Investment</i> (FCI)	= Rp 2,83 triliun
<i>Working Capital Investment</i> (WCI)	= Rp 499,21 miliar
<i>Total Capital Investment</i> (TCI)	= Rp 3,28 triliun
<i>Break Even Point</i> (BEP)	= 31 %
<i>Shut Down Point</i> (SDP)	= 10 %
<i>Before taxes Pay Out Time</i> (POT) _b	= 2,215 tahun
<i>Pay Out Time after taxes</i> (POT) _a	= 2,623 tahun
<i>Before taxes Return on Investment</i> (ROI) _b	= 30 %
<i>After taxes Return on Investment</i> (ROI) _a	= 24 %
<i>Interest Rate of Return</i> (IRR)	= 30,57 %

Dengan mempertimbangkan uraian di atas, maka pendirian pabrik propen layak untuk ditinjau lebih lanjut.

ABSTRACT

PRELIMINARY DESIGN OF PROPENE (PROPYLENE) PLANT FROM LPG USING PROPANE DEHYDROGENATION PROCESS CAPACITY 100,000 TONS/YEAR (Design of Distillation Column 1 (DC – 401))

Written by

NURUL IZZATI HANIFAH

Propene's plant made from LPG propane will be established in Gresik, East Java. The factory location chosen with consideration upon the availability of raw materials, transportation facilities, readily available labor and environmental conditions.

The factory will produce 100,000 tons/year propene with operating time 24 hours/day and 330 days/year. The raw materials LPG propane used is 35,371.3248 kg/hr. The utilities that are needed for the plant are water, steam, refrigeration, electricity, pressured air.

The management form that used is Limited Liability Company (Perseroan Terbatas) with line and staff organization structure and employs about 195 people.

The result of economic analysis as follows:

Fixed Capital Investment (FCI)	= Rp 2.83 trillion
Working Capital Investment (WCI)	= Rp 499.21 billion
Total Capital Investment (TCI)	= Rp 3.28 trillion
Break Even Point (BEP)	= 31 %
Shut Down Point (SDP)	= 10 %
Before taxes Pay Out Time (POT) _b	= 2.215 years
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Interest Rate of Return (IRR)	= 30.57 %

Taking into account the explanation above, the establishment of Propene (Propylene) plant is deserved to be studied further.