ABSTRACT

MANUFACTURING OF ALUMINUM CHLORIDE FROM BAUXITE AND HYDROCHLORIDE ACID (HCl) WITH CAPACITY 35.000 TONS/YEAR
(Design of Reactor (R-201))

By

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Aluminum Chloride factory made from raw bauxite and HCl, planned to be established in Cilegon, Banten. The mill is based on the consideration of the availability of raw materials, adequate transportation facilities, easily accessible labor and environmental conditions.

The plant is planned to produce Aluminum Chloride 35,000 tons / year, with operating time 24 hours / day, 330 days / year. The raw materials used are Bauxite of 3000 kg / hour and HCl of 12,250 kg / hour.

The provision of utility needs of the plant consists of water supply unit, steam procurement, air instrument procurement, electricity procurement and fuel unit. Company form is Limited Company (PT) using line organization structure and staff with total employee counted 168 people.

From the economic analysis obtained:

Fixed Capital Investment	(FCI)	=	Rp 2.358.659.066.989,-
Working Capital Investment	(WCI)	=	Rp. 274.741.883.167,-
Total Capital Investment	(TCI)	=	Rp. 2.633.400.950.156,-
Break Even Point	(BEP)	=	51,02%
Shut Down Point	(SDP)	=	24,45%
Pay Out Time before taxes	$(POT)_b$	=	3,17 tahun
Pay Out Time after taxes	$(POT)_a$	=	3,67 tahun
Return on Investment before taxes	$(ROI)_b$	=	22,36%
Return on Investment after taxes	$(ROI)_a$	=	21,85%
Discounted cash flow	(DCF)	=	17,48%

Considering the above exposure, it is proper that the establishment of Aluminum Chloride factory is studied further, because it is a profitable factory and has a good future.

ABSTRAK

PRARANCANGAN PABRIK ALUMINIUM KLORIDA DARI BAUKSIT DAN HCL DENGAN KAPASITAS 35.000 TON/TAHUN (Perancangan Reaktor (R-201))

Oleh

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Pabrik Aluminium Klorida berbahan baku bauksit dan HCl, direncanakan didirikan di Cilegon, Banten. Pendiriaan pabrik berdasarkan atas pertimbangan ketersediaan bahan baku, sarana transportasi yang memadai, tenaga kerja yang mudah didapatkan dan kondisi lingkungan.

Pabrik direncanakan memproduksi Aluminium Klorida sebanyak 35.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah Bauksit sebanyak 3000 kg/jam dan HCl sebanyak 12.250 kg/jam.

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

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 168 orang.

Dari analisis ekonomi diperoleh:

Fixed Capital Investment	(FCI)	=	Rp. 404.192.474.016,-
Working Capital Investment	(WCI)	=	Rp. 71.328.083.650,-
Total Capital Investment	(TCI)	=	Rp. 475.520.557.666,-
Break Even Point	(BEP)	=	45,66 %
Shut Down Point	(SDP)	=	23,80 %
Pay Out Time before taxes	$(POT)_b$	=	2 tahun
Pay Out Time after taxes	$(POT)_a$	=	2 tahun
Return on Investment before taxes	$(ROI)_b$	=	26,27 %
Return on Investment after taxes	$(ROI)_a$	=	21,02 %
Discounted cash flow	(DCF)	=	27,37 %

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