ABSTRACT

FEASIBILITY STUDY ETHANOL PLANT FROM BAGASSE BY PROCESS SEPARATED HYDROLYSIS AND FERMENTATION (SHF)
CAPACITY 32.000 TON/YEAR
(Designing Adsorber D-501)

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Ethanol is chemical substance with variety in function. The demand of Ethanol keeps growing, and at present the production technology still use polysaccharide as raw material which compete with food. The purpose of this Ethanol Plant is supplying the demand, with Bagasse as raw material that doesn’t compete with food.

Ethanol plant planned to be built at Terusan Nunyai, Lampung Tengah, Lampung Province. Plant capacity is 32.000 ton/year which need Bagasse 450 ton/day. The plant operates in 24 hrs./day, 330 days/year. Utility plant supply water in Water Treatment Plant (WTP), supply electricity and steam, supply fuel and supply pressed air.

The company entity form is Limited Liability Company (PT) with line and staff organization structure. Total labor is 132 peoples. Economic study of the plant is

Fixed Capital Investment (FCI) = Rp 447.434.177.404
Working Capital Investment (WCI) = Rp 304.580.419.228
Total Capital Investment (TCI) = Rp 752.014.596.632
Break Even Point (BEP) = 55,07 %
Shut Down Point (SDP) = 22,89 %
Pay Out Time after taxes (POT)ₐ = 3,5 tahun
Return on Investment after taxes (ROI)ₐ = 64,34 %
Discounted cash flow (DCF) = 21,59 %

The result of technical and economic feasibility study is feasible and need further analysis, because the plant is profitable with good sustainability.

Key Word: Ethanol, Bagasse, Cellulose, Hydrolysis, Fermentation