ABSTRACT

PRADESIGN OF XYLITOL PLANT
BY HYDROGENATION PROCESS OF XYLOSE
CAPACITY 25,000 TONS/YEAR
(Design Reactor (RE-201))

By

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Xylitol plant produced by reacting xylose and hydrogen was planned to be in industrial plant in Tarahan, Katibung, Lampung Selatan. Plant was established by considering the availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Plant's production capacity is planned 25,000 tons/year, with operating time of 24 hour/day and 330 working days in a year. The raw materials used are much xylose 2612.793 kg/hr and hydrogen 34.663 kg/hr.

Labor needed as many as 182 people with a business entity form Limited Liability Company (PT) which is headed by a Director who is assisted by the Director of Production and Director of Finance with line and staff organizational structure. From the economic analysis is obtained:

- Fixed Capital Investment (FCI) = Rp 640,768,653,202,-
- Working Capital Investment (WCI) = Rp 113,076,821,153,-
- Total Capital Investment (TCI) = Rp 753,845,474,355,-
- Break Even Point (BEP) = 32%
- Shut Down Point (SDP) = 28%
- Pay Out Time after Taxes (POT)_a = 2.9 year
- Return on Investment after Taxes (ROI)_a = 21.1 %
- Internal Rate Return (IRR) = 27%
- Annual Net Profit (Pa) = Rp 158,973,102,325/year

Consider the summary above, it is proper establishment of xylitol plant to studied further, because the plant is profitable and has good prospects.