

## **ABSTRACT**

Factory glucose from corn starch hydrolysis process was designed with a capacity of 50,000 tons / year and is planned to be established in Gresik, East Java. The factory operated for 330 days in a year or 24 hours per day with 170 employees. The raw material is corn mill with needs of corn are 66 309 tons / year. The production process will operate at a temperature of 80 ° C for hydrolysis with a pressure 1 atm and using CSTR reactor. The utility consists of 45 192 kg / h cooling tower, 42 740 kg / hr of steam, water needs 61 444 kg / h, while fuel electric power about 672 KW.

Chemical plants also use a backup generator. The factory was established with fixed capital investment of 54,772,565,515.74 rupiahs. Necessary working capital of 40,247,181,903.26 rupiahs. Factory classified low risk, of economic evaluations obtained per year profit after tax of 21,706,174,101 rupiahs. Rate of Return on Investment (ROI) of 39,63%, Pay out Time (POT) at 2.01 in, Break Event Point (BEP) of 40.44% capacity, Shut Down Point (SDP) amounted to 29.98% of capacity, and Discounted Cash Flow (DCF) of 18.70%. Based on these results it can be concluded that the factory glucose from corn starch hydrolysis process with a capacity of 50,000 tons / year is quite interesting to study further.