

ABSTRACT

Factory of Hydrogen Peroxide from isopropanol provide a very bright prospect remembering that Hydrogen Peroxide used much by industries, as Hydrogen Peroxide is one of the needs being an aid chemical substances. Reaction happening in making process of Hydrogen Peroxide from isopropanol taking place in a gas – liquid phase by using a bubble reactor. The reaction is exothermal in nature. Reactor operates in temperature 130°C with pressure 1 atm.

Factory of Hydrogen Peroxide is designed with capacity 25.000 ton/year. It needs standard materials as much as 4642, 300 kg/hour. Utilities needed in the form of water as much as 9682,4190 kg/hour, 1884,3962 as steam and need of electric as much as 512,6997 KW. The factory is planned to establish in Cilegon, Banten having land area 17,810 ha. The factory is planned to operate during 24 hours during 330 days in a year. Working force needed as many as 112 persons.

Fixed capital obtained is US \$ 19,538,948,81 for funding production procurement come from abroad and Rp 37.721.714.867, 52 in procuring local/domestic production facilities. The working capital as much as Rp 169.525.958.489,91. Results of economical evaluation show that profits before-tax is Rp 95.860.061.426,87/year and after-tax is Rp 57.516.036.856,12/year. Return On Investment (ROI) before-tax 39,4679% and after-tax 23,6807%. Pay Out Time (POT) before-tax 2,0215 and after-tax 2,3691 year. Discounted Cash Flow (DCF) as big as 49,188%, Break Event Point (BEP) as big as 43,31% capacity. Whereas Shut Down Point (SDP) as big as 23,20%. Based on considerations of economical evaluation results, the factory of hydrogen peroxide from isopropanol is reasonable to establish.

ABSTRAKSI

Pabrik Hidrogen Peroksida dari isopropanol memberikan prospek yang sangat cerah mengingat Hidrogen Peroksida banyak digunakan di dalam industri, karena Hidrogen Peroksida merupakan salah satu kebutuhan sebagai bahan kimia pembantu . Reaksi yang terjadi pada proses pembuatan Hidrogen Peroksida dari isopropanol dari berlangsung dalam fase gas – cair menggunakan reaktor gelembung. Reaksi itu bersifat eksotermal. Reaktor bekerja pada suhu 130°C dan tekanan 1 atm.

Pabrik Hidrogen Peroksida dirancang dengan kapasitas 25.000 ton/tahun. Membutuhkan bahan baku isopropanol sebanyak 4642,008 kg/jam. Utilitas yang diperlukan berupa air sebanyak 9682,4190 kg/jam, 1884,3962 sebagai steam, dan kebutuhan listrik sebesar 512,6997 KW. Pabrik direncanakan didirikan di Cilegon, Banten dengan luas tanah 17,810 ha. Pabrik direncanakan beroperasi selama 24 jam sehari selama 330 hari dalam setahun. Tenaga kerja yang dibutuhkan sebanyak 112 orang

Modal tetap yang diperoleh sebesar US \$ 19,538,984.81 untuk biaya pengadaan produksi yang berasal dari luar negeri dan Rp. 37.721.714.867,52 untuk pengadaan fasilitas produksi dalam negeri/local. Modal kerja sebesar Rp. 169.525.958.489,91 Hasil evaluasi ekonomi menunjukkan keuntungan sebelum pajak Rp. 95.860.061.426,87/tahun dan sesudah pajak Rp. 57.516.036.856,12/tahun. Return On Investment (ROI) sebelum pajak 39,4679 % dan sesudah pajak 23,6807 %. Pay Out Time (POT) sebelum pajak 2,0215 tahun dan sesudah pajak 2,9691 tahun. Discounted Cash Flow (DCF) sebesar 49,188 %, Break Event Point (BEP) adalah 43,31 % kapasitas, Sedangkan Shut Down Point (SDP) sebesar 23,20 %. Berdasarkan pertimbangan hasil evaluasi ekonomi, maka pabrik hidrogen peroksida dari isopropanol sangat layak didirikan.