ABSTRAK

Pra rancangan pabrik gula kristal putih menggunakan tebu sebagai bahan baku utama. Pabrik direncanakan beroperasi selama 330 hari per tahun, 24 jam sehari dengan kapasitas 150.000 ton/tahun. Proses pemurnian yang dipilih untuk produksi gula adalah proses sulfitasi. Lokasi pabrik direncanakan didirikan di Sungai Kunyit, Kabupaten Mempawah, Kalimantan Barat dengan luas area pabrik 11.000 m^2. Bentuk badan usaha yang direncanakan adalah Perseroan Terbatas (PT) dengan jumlah tenaga kerja yang dibutuhkan 135 orang. Kebutuhan air pabrik sebesar 288.592,22 kg/jam yang diperoleh dari air laut di Sungai Kunyit. Kebutuhan listrik diperoleh dari generator dengan daya 700 kW. Hasil analisis ekonomi diperoleh sebagai berikut: *Fixed Capital Investment* = Rp 576.758.166.156, *Working Capital Investment* = Rp. 20.952.253.925, *Total Capital Investment* = Rp. 1.048.106.223.040,08, Total Biaya Produksi = 1.762.480.124.265,42, Hasil Penjualan =Rp. 2.645.409.210.000, Laba bersih = Rp. 427.965.349.060,94, *Pay Out Time* (POT) = 1 tahun 2 bulan, *Shut Down Point* = 37% dan *Break even Point* (BEP) = 44 %. Dari analisa hasil ekonomi di atas maka dapat diambil kesimpulan bahwa perancangan pabrik Gula Kristal Putih dari tebu menggunakan proses pemurnan sulfitasi kapasitas 150.000 ton/tahun ini layak untuk didirikan karena 4 faktor yaitu ROI, POT, BEP dan SDP sudah memenuhi syarat standar kelayakan.

Kata kunci : Gula kristal putih, Sulfitasi, Tebu

ABSTRACT

Pre-design of a white crystal sugar factory uses sugarcane as the main raw material. The factory is planned to operate for 330 days per year, 24 hours a day with a capacity of 150,000 tonnes/year. The purification process chosen for the production of sugar is the sulfation process. The factory location is planned to be established in Sungai Kunyit, Mempawah Regency, West Kalimantan with a factory area of 11,000 m^2. The planned business entity form is a Limited Liability Company (PT) with a workforce of 135 people. The factory's water requirement is 288,592.22 kg/hour which is obtained from seawater in the Kunyit River. The electricity requirement is obtained from a generator with a power of 700 kW. The results of the economic analysis are as follows: Fixed Capital Investment = IDR 576,758,166,156, Working Capital Investment = IDR. 20,952,253,925 Total Capital Investment = Rp. 1,048,106,223,040.08, Total Production Cost = 1,762,480,124,265.42, Sales Proceeds = Rp. 2,645,409,210,000, net profit = Rp. 427,965,349,060.94, Pay Out Time (POT) = 1 year 2 months, Shut Down Point = 37% and Break-even Point (BEP) = 44%. From the analysis of the economic results above, it can be concluded that the design of a White Crystal Sugar factory from sugar cane using a sulfitation refining process with a capacity of 150,000 tons/year is feasible to establish because 4 factors, namely ROI, POT, BEP and SDP have met the eligibility standard requirements.

Keyword : *White Crystal Sugar, Sulphitation, Sugarcane*