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## INTISARI

Ekonomi yang terus berkembang dan memasuki era perdagangan bebas menuntut Indonesia untuk dapat bersaing dengan negara lain terutama dalam bidang industri. Pada pasal 8 ayat 1, UU No.3 tahun 2014 terdapat Rencana Induk Pembangunan Industri Nasional (RIPIN), di dalamnya telah ditentukan 10 industri prioritas yang dikelompokkan kedalam 3 kelompok, yaitu industri andalan, industri pendukung, dan industri hulu. Industri etilen termasuk kedalam salah satu dari jenis industri hulu sehingga masuk kedalam daftar industri prioritas RIPIN.

Di Indonesia produsen utama etilen adalah PT. Chandra Asri dan selama tahun 2007 – 2012 produksi etilen cenderung menurun dengan rata – rata per tahun -1,66% sedangkan pada taun 2013 permintaan etilen mencapai 1,28 juta ton dan meningkat setiap tahunnya. Sehingga ini menjadi dorongan dibangunnya pabrik etilen dari nafta dengan kapasitas 800 kilo ton/tahun untuk dapat memenuhi kebutuhan dalam negeri. pada proses produksi etilen, nafta sebanyak 3.596.352,7 ton/tahun akan melalui proses *cracking* di *furnace* dan melalui serangkaian proses pemurnian sehingga diperoleh produk berupa etilen sebanyak 800 kilo ton/tahun, propilen 485 kilo ton/tahun, dan *py-gas* 473 kilo ton/tahun. Selain nafta juga di perlukan bahan pendukung lainnya berupa adsorben ZnO sebanyak 2.250,3 ton/tahun, dan adsorben *silica gel* sebanyak 295,7 ton/tahun. Pada proses nya pabrik juga membutuhkan bahan pendukung seperti air, *steam*, udara bertekanan, dan listrik yang di-*supply* dari unit utilitas. Air yang dibutuhkan 43.296,03 ton/tahun untuk proses produksi dan kebutuhan umum, *steam* sebanyak 8 juta ton/tahun yang digunakan untuk media pemanas dan juga penggerak, udara bertekanan sebanyak 22.997 ton/tahun, listrik sebesar 11.385,36 HP, dan refrigeran sebesar 4 juta ton/tahun. Selain itu, selama proses produksi membutuhkan 71 orang/*shift* nya.

Pabrik ini akan dibangun di Cilegon, Banten dengan luas daerah sekitar 1300 ha. Pada pembangunannya pada tahun 2024 membutuhkan dana *fixed capital* sebesar \$ 2.939.609.712,1/tahun dan *working capital* sebesar \$1.199.689.249,22/tahun. Dari hasil penjualan produk akan diperoleh *profit before tax* sebesar \$ 826.552.377,10 /tahun. Berdasarkan hasil evaluasi kelayakan dan *profitability* diperoleh nilai BEP, ROIb, POTb, dan DCFRR masing – masing sebesar 43%, 23% (*low risk*), 2,699 tahun, dan 21,21%. Sehingga berdasarkan hasil yang diperoleh dari segi ekonomi pabrik ini menarik untuk dibangun.

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## ABSTRACT

*Economy continues to develop and enter the era of free trade that requires Indonesia to be able to compete with other countries, especially in the industrial field. In article 8 paragraph 1, UU No.3 of 2014 contains the National Industrial Development Master Plan (RIPIN), in which 10 priority industries have been determined which are grouped into 3 groups, which is reliable industries, supporting industries, and upstream industries. Ethylene industry is included in one of the upstream industry types so it is included in the list of RIPIN priority industries.*

*In Indonesia, the main producer of ethylene is PT. Chandra Asri and during 2007-2012 ethylene production tended to decrease by an average of -1.66% per year while in 2013 ethylene demand reached 1.28 million tons and increased every year. This is the background to build an ethylene plant from naphtha with a capacity of 800 kilo tons/year to be able to meet the domestic needs. In the ethylene production process, naphtha as much as 3,596,352.7 tons/year will go through the cracking process in the furnace and through a series of refining processes to obtain products in the form of ethylene as much as 800 kilo tons/year, propylene 485 kilo tons/year, and py-gas 473 kilo tons/year. Besides naphtha, another supporting material such as ZnO adsorbent consumption is as much as 2,250.3 tons/year, and silica gel adsorbent consumption is as much as 295.7 tons/year. In the process the factory also needs supporting materials such as water, steam, compressed air, and electricity supplied from the utility unit. Water consumption is 43,296.03 tons/year for the production process and general needs, steam as much as 8 million tons/year which is used for heating and driving media, compressed air as much as 22,997 tons/year, electricity generated at 11,385.36 HP, and 4 million tons/year of refrigerant. In addition, during the production process requires 71 people/shift.*

*This plant will be built in Cilegon, Banten with an area of around 1300 ha. Its construction in 2024 requires a fixed capital fund of \$2,939,609,712.1/year and a working capital of \$1,199,689,249.22/year. From the sale of products, a profit before tax of \$826,552,277.10/year will be obtained. Based on the results of the evaluation of the feasibility and profitabilitiy obtained values of BEP, ROIb, POTb, and DCFRR respectively of 43%, 23% (low risk), 2.7 years, and 21.21%. So based on the results obtained from the economic point of view this factory is interesting to build.*