ANALYSIS OF DISTRIBUTION AND TRANSPORTATION COST FOR CEMENT DISTRIBUTION NETWORK WITH PACKING PLANT (CASE STUDY : PT. SEMEN GRESIK (PERSERO), TBK)

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ABSTRACT

PT. Semen Gresik (Persero) Tbk is the largest cement factory in Indonesia. This liability company dominating national market share by 43.3%. In 2010, its production capacity was 19,000,000 ton or 37% of national production capacity. Overall, in 2010 its total volume of sales including export exceeded 17.9 ton. In the contrary, the material handling was the biggest component in the total cost; Rp 923,0 billion or 39.8% of total cost. Because of that, PT. Semen Gresik needs an optimal network configuration to minimize its distribution and transportation cost. In the term of logistic, the observed components were plant, warehouse, packing plant, distributor, and retailer within each target city/town. In this research, there would be an optimize configuration of cement distribution network throughout Java and Bali. The design of network distribution configuration is using linear programming processed by LINGO. The expected output would be an optimal configuration with minimum total cost. The total cost would be generated from configuration distance of distribution multiple by material handling cost multiple by volume throughout plant-packing plant-and packing plant. To calculate the efficiency of using packing plant, the program would run the model two times. There would be two scenarios of distribution network, whether with or without packing plant. From those scenarios, packing plant in Ketapang Banyuwangi generates cost efficiency of Rp 329,380,002, 00 on 2012, Rp 536,536,327,00 on 2013 and Rp 770,382,814,00 on 2014.

Keyword: packing plant efficiency, integer programming, optimize the network configuration of cement distribution.