SUMMARY

PUTRI PUSPITASARI. Optimization of Supply Premium Import To Fuel Terminal West Cluster at PT Pertamina Persero. Supervised by BUDHI H ISKANDAR and SRI RAHARDJO.

One of the essential components from logistic is transportation. It’s contributed more than 60% from the total cost of logistic. PT Pertamina Persero is the State Owned Enterprises (SOEs) are obliged to ensure the resilience and availability of the national premium product and still be able to compete for a profit, the necessary efficiency in product distribution either by optimizing the supply pattern. This optimization is utilizing tools and facilities in Terminal BBM (hereinafter: TBBM) which has not been optimal so it’s expected to obtain patterns of supply of imported premium to TBBM West Cluster by minimizing transportation costs. The aim of this study are (1) to analyze patterns of supply and the cost of transporting imported premium to TBBM in west cluster at this time (2) designing, analyzing patterns of supply optimization results and calculate the cost of transporting imported premium to TBBM in west cluster to minimize transport costs (3) analyze the cost of transporting in the current supply patterns with patterns of supply optimization chosen, so it will be found the level of efficiency to be gained by adopting a new supply pattern.

The analytical method for optimization using Integer Linear Programming (software POM for Windows) and analysis branch and bound to acquire patterns of supply at a minimum cost. The optimization design have been considered the needs and abilities of premium facilities and amenities include: premium storage tank capacity in each TBBM, and physical capabilities port (port information). This study used secondary data that sourced from the document records and reports in 2015 which is sourced from digital data (web base) and hardcopy form.

The results of this study provide some alternative patterns of supply to the calculation of transportation costs of each pattern of supply. First alternative is to use TBBM Merak as transshipment locations and distribution centers throughout TBBM premium in west cluster with transportation costs of US $ 4,671,614 / month; Second alternative is to use TBBM Merak as a transshipment location for the distribution of premium to TBBM in west cluster except for supply to TBBM Medan and TBBM Tanjung Uban do direct supply from the loading port at a cost of US $ 3,782,151 / month; the third alternative is used TBBM Merak as a transshipment location for the distribution of premium to TBBM Long, TBBM Semarang and TBBM Teluk Kabung while supplies premium to TBBM Medan, TBBM Tanjung Uban and TBBM Tanjung Gerem using direct supply at a cost of US $ 4,171,063 / month. The chosen supply patterns is the second alternatives with transport costs 21% lower than the current supply pattern (US $ 4,845,275 / month). Application of this supply pattern will increase the utilization of the jetty at TBBM Merak from 35% to 66.4% and will increase the tank facilities from 37% to 88%.

Keywords: integer linear programming, optimization, pattern of supply, transportation cost