

ABSTRACT

This report concentrates on calculating the optimal number of the petrol tankers to minimize the transportation cost. The author studied in the case of the transportation of oil products to customers in Bangkok, Pathumtanee, Ayutthaya, Saraburi, Samutsongkhram, and Rayong, the using linear programming technique and the sensitivity analysis as analytical tools. Steps in study: Firstly, the study is about transportation system of the oil company, Secondly, the study of the factors that effect to design the route model of tankers and formulate the linear programming model. Thirdly, the planning and designing the tanker's route model to estimate the number of trips that the tanker can operate per day. Fourthly, the formulation the linear programming model to obtain the optimal number of tankers in upcountry depots. Finally, the calculating the number of tankers that locate in Bangkok depot.

The study results obtained show that the optimal number of 10 wheelers that locate in Bangkok, Pathumtanee, Ayutthaya, Saraburi, Samutsongkhram, and Rayong is 63, 4, 0, 1, 12 and 0 respectively. And the number of semi-trailers that locate in Bangkok, Pathumtanee, Ayutthaya, Saraburi, Samutsongkhram, and Rayong is 0, 0, 2, 2, 0, and 12 respectively. The transportation cost is 368,454.46 bahts per day by estimating the diesel's price at 10.25 bahts per liter. So, The new transportation system can be more economic than the current system.

The analytical methods in this project can benefit the company for planning in transportation system with respect to the number of tankers.