Sahapharp Ketclaysaeng 2007: Analysis of Cost and Benefit on the Use of Natural Gas for Vehicles (NGVs) of Sedans in Bangkok Metropolitan. Master of Economics, Major Field: Economics, Department of Economics. Thesis Advisor: Assistant Professor Sungvean Chantongkaew, Ph.D. 116 pages.

The objectives of this study are: (1) to review the background of the use of natural gas for vehicles in Thailand; (2) to analyze the cost and benefit of investment on modification of fuel system for the use NGV to substitute gasoline; and (3) to estimate and compare the potential impact of NGV uses on foreign currency saved and to describe its impact on environment quality. Secondary data collected from journal, thesis, independent, project documentation and e-data are used to estimate the investment cost in fuel system modification and in estimating the fuel and maintenance costs of sedan using NGV as compare to gasoline.

Natural gas for vehicles were initially introduced after the World War II and later introduced in Thailand in 1984 by Thai government; Natural gas was then used with buses and taxis but was not successful because at the time fuel prices had been low . In 1993 oil prices and pollution problems were high, The Thai government is now interested in NGV again. The investment cost in fuel system modification of one-year-old sedan was 50,000 Baht. It's estimated that the return on investment in term of cost saving was 207,929 Baht The investment cost on two-years-old sedan was 44,642 Baht and yielded the return on investment of 154,157 Baht. The investment cost on three-years-old was 39,859 Baht and yields the return 107,023 Baht. The investment cost on four-years-old was 35,587 Baht per sedan yields the return 65,917 Baht. Finally, the investment cost of five-years-old was 31,744 yields the return at 30,376 Baht per sedan. The investment in modifying fuel system to use NGV yielded a very high return even if the sedan has low efficiency. For all sedans having life span from one to five years registered in Bangkok metropolitan, the use NGV would save foreign exchange of about US183.29 million dollars a year. Using NGV to substitute for gasoline yields financial benefit not only to sedan owner but also to overall economy in terms of foreign exchange saved. The use of NGV in sedans also reduces pollution as compare to the gasoline's.

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