

3836/253 ENAT/M : MAJOR : APPROPRIATE TECHNOLOGY FOR RESOURCES DEVELOPMENT :

M.SC. (APPROPRIATE TECHNOLOGY FOR RESOURCES
DEVELOPMENT)

KEY WORD : ENVIRONMENT IMPACT / TECHNOLOGY ASSESSMENT / HYBRID ELECTRIC
BOATS / LONG TAIL DIESEL ENGINE BOATS

RATTAPON ONCHANG : THE COMPARATIVE ENVIRONMENT IMPACT BETWEEN
HYBRID ELECTRIC BOATS AND LONG TAIL DIESEL ENGINE BOATS CASE STUDY
PHADUNGKRUNGKASEM CANAL AND MAHASAWAT CANAL. THESIS ADVISOR : DEBHANOM
MUANGMAN, M.P.H.,D.P.H., KASEM KULPRADIT, M.Sc., UTHAI CHAREONWONG, M.Sc.,M.A.,
VUTHICHAI PHANCHET, M.Eng.,Ph.D., VEERAPOL MONYAKOL, M.Eng.,Ph.D., 223 P
ISBN 974-589-086-3

At present, inland waterway transportation employing long tail diesel engine boats is widely used in Bangkok due to the traffic congestion on the road. However, most Bangkokians have complained about the long tail diesel engine boats because of their lack of safety and pollution. Basically, the Bangkok Metropolitan Administration (BMA) is responsible for inland waterway transportation. The BMA has tried to resolve the long tail diesel engine boats problems by replacing them with hybrid electric boats which were invented by the National Electronics and Computer Technology Center (NECTEC) in June 1996.

The objective of this research is to compare hybrid electric boats and long tail diesel engine boats by assessing physical and biological environment, human use values and quality of life of passengers and local people along the canal. Primary data were collected in Phadungkrungkasem canal and Mahasawat canal.

T-test, simple correlation, oneway analysis and quality of service model were employed to analyse the data in order to evaluate. As a result, most aspects of hybrid electric boats are better than the long tail diesel engine boats (at significance, $\alpha = 0.05$). The exception is that the quantity of oil spilt from the hybrid electric boats is not statistically significantly less than that spilt from long tail diesel engine boats.