

## B-55 Studies on Alternatives of Urban Transport Systems

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Charging Procedure, Simulation Model

The purpose of this research project is to evaluate alternative transport systems in the urban and estimate the effects of mitigation measures in order to realize the urban areas with low environmental burden. To do this, electric vehicles and hybrid vehicles are picked up as alternative vehicles and their present and possible future technologies are investigated. A simulation model evaluates the effects of mitigation measures. Moreover, the investigation of the international trend on environmentally sustainable transport is conducted. The contents of this project are as follows.

- 1) Evaluation of the compact electric vehicle already developed, development of detailed energy consumption monitoring system for the vehicle and survey of that vehicle's acceptability by questionnaire, 2) estimation of regeneration energy, examination and evaluation of regeneration techniques of the combination of super capacitor and battery, 3) estimation of the effect of load spent for air-conditioning on energy economy and investigation of energy economy test methods for electric and hybrid vehicles, 4) development of a charging technique to extend the lifetime and capacity of battery for conventional electric vehicles, 5) development of a prediction model for carbon dioxide emission by urban transport systems, estimation of effects of mitigation measures by the model, 6) analysis of the cause of increase in CO<sub>2</sub> emission from urban transport systems and investigation of the international trend on environmentally sustainable transport.