

LCA Study of Hybrid Minivan*

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1. Introduction

LCA (Life Cycle Assessment) is a method in that resources and energy a product uses up during production, environmental load the product puts during operation, and further, total environmental impact the product places throughout its lifecycle are to be evaluated quantitatively. Toyota established the 'LCA Study Team' in the company in 1997 with the idea that importance is to be placed on reduction of environmental impact not only by enhancing the environmental performance itself of a product but also by the reduction through its total lifecycle; started its LCA activities.

In the fiscal years 1997 through 1998, the team mainly investigated methods for automotive LCA. Specifically, in order to define automotive lifecycle as the scope of the study, it established taxonomy of energy and materials to be used up, sub-stratification of production process to identify process units in obtaining basic data, and methodology to evaluate recycling. Further, it also investigated by stage of lifecycle ways to study data for environmental impact analysis. As for outside data such as amounts of energy consumption during materials production, it investigated data sources to obtain up-to-date data. As for inside data, it established a procedure to obtain (calculate) and establish data by production plant by reviewing existing data at each plant. In the fiscal year 1999, based on results of those investigations, it obtained necessary data, and established an evaluation model and a database, in line with the Toyota LCA method.

Moreover, in the fiscal year, the 'Toyota Parts LCA WG (Working Group)' was established in collaboration with parts suppliers. The first-year objectives of the working group were to spread the Toyota LCA method to parts suppliers and to study data concerning environmental load during parts production process. As a result of this activity, Toyota's LCA database was strengthened and thus enabled us to move toward evaluating various other vehicle models. The working group has continued to be active, and in 2002, the third year after the

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