-Abstract-

消費者碳標籤 --- 開發飲料商品的供應鏈產品碳足跡和消費者碳指標

Consumer Carbon Label: Development of Supply Chain Product Carbon Footprint and Consumer Carbon Index for Beverage Merchandise

The importance of reducing products' carbon footprints has been raised in various world economic forums, with an emphasis on mitigating carbon emissions along the whole supply chain in the life cycle of a product. Mapping a product's carbon footprint at organisation level is not an effective means of reducing its carbon emissions; instead, it is vital to measure the carbon emitted throughout the product's life cycle, across the various organisations in its supply chain. More complex and comprehensive analysis is required to map a product's carbon footprint along its supply chain than at organisation level. Carbon labels attached to products enable consumers to make more environmentally friendly choices between products in the same category. These important concerns are expected to motivate companies to proactively address the adverse effects of greenhouse gases on the world's climate. Compared with their counterparts in europe, consumers and manufacturers in hong kong are far less aware of the need to reduce products' carbon footprints. How much carbon is emitted during the production of a beverage product, such as a can of soft drink or a bottle of mineral water, in hong kong? How are carbon emissions affected by the recycling of water bottles and various other forms of soft drink product packaging? How aware are the consumers about the information provided on products' carbon labels, and what are their attitudes towards carbon-label information when purchasing grocery products in supermarkets? In the project, therefore, the carbon footprints of beverage products will be determined and a novel methodology for this product carbon footprint measurement will be developed. The carbon emissions at the major stages of the life cycle of each product from raw-material cultivation to disposal and recycling will be evaluated. Consumers' awareness and acceptance of beverage products with carbon-emission data will be analysed. The willingness of individual consumers in hong kong to use product carbon labels when purchasing beverage merchandise will be evaluated. The findings of this project will increase students' awareness of the value of analysing carbon emissions from the supply chain throughout the life cycle of a consumable product. The product carbon footprint measurement methodology and application platform developed in the study will help industry practitioners to calculate carbon emissions and optimise their production processes to reduce the amount of carbon emitted at each stage. The results of a comprehensive consumer survey will reveal the extent of hong kong consumers' awareness of carbon labels and their attitudes towards using carbon-label data, offering an important index for long-term longitudinal comparison of consumers' carbon consciousness. Overall, the proposed supply chain product carbon footprint methodology, the carbon label and the results of analysing consumers' carbon-related behaviour will advance research on the beverage industry and increase consumers' awareness on carbon-labelled beverage products.