Abstract

Project Code : MRG5680008

Project Title : A Model of Green Growth Assessment for Thailand's Highway Infrastructure Developments

Investigator : Nakhon Kokkaew

E-mail Address : knakhon@wu.ac.th

Project Period : June 3, 2013 – December 2, 2015

Abstract:

The objective of this research project is to develop and propose a new assessment method, appropriate for being used in Thailand, for evaluating the greenness of highway infrastructure. Green roads or highways are, as defined in this research, ones that are designed, constructed, and operated in a manner considered to be environmentally friendly. Unlike other green assessment methods, this research incorporates the economic aspects into the green assessment so as to determine a healthy balance between greenness of the projects and their contribution to economic growth. Accordingly, the proposed model and method will be developed based on the concept of life cycle assessment (LCA) and other green rating systems.

The results of this research include a new framework of green growth assessment to be used for Thailand's highway infrastructure by combining economic aspects and environmental aspects of the project into a single index. The proposed method is intended to be served as a "green-growth" barometer of major highway projects across Thailand. To demonstrate how the proposed model can be applied in practice, Bangkok's motorway No. 9 is employed as a case study project presented in this research project. The results of this proposed method can be applied to evaluate the green-growth indices of major highways in Thailand. This study may help advance the knowledge and practices of sustainable highway infrastructure developments.

Keywords : Green growth / Green infrastructure / Life cycle assessment (LCA) / Economic analysis