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Environmental rating of vehicles with different fuels and drive trains: a univocal and applicable methodology

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Abstract

A new and applicable environmental rating tool for use as a policy tool, called EcoScore, was developed and allows evaluating the environmental impact of road vehicles with different drive trains or using different fuels. A single environmental indicator integrates different aspects of the environmental impact of the vehicles such as global warming, air quality depletion and noise pollution. To integrate these different aspects, the Ecoscore methodology includes different damage categories like: global warming, human health impairing effects and harmful effects on ecosystems. The contribution of the different normalised damages to the single value, called Ecoscore, is based upon a weighting system. The methodology can also be used for the ranking of heavy duty vehicles and two-wheelers. However, in this paper, the methodology will be explained using passenger vehicles and light-duty vehicles as an illustration. The methodology will be implemented by the Flemish government as a policy tool for the promotion of cleaner vehicles. An extensive database including vehicle records and their related emission data was used to develop, to validate and to analyse the environmental rating system. A sensitivity analysis was carried out which allowed the evaluation of the robustness of the methodology.

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