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CARBON FOOTPRINT OF MUNICIPAL SOLID WASTE COLLECTION IN THE TREVISO AREA (ITALY)

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Abstract

Carbon Footprint (CF) is an environmental indicator used in Life Cycle Assessment (LCA) that allows measuring the total amount of CO_2 emissions caused directly or indirectly by an activity or accumulated through the life cycle stages of a product (ISO 14064-14067).
In this article CF was used to analyse and assess the environmental impacts of the resources used for the collection of municipal solid waste by the company Contarina S.p.A. Contarina oversees waste management for part of the Treviso province (Italy), serving about 260,000 appliances in 50 municipalities distributed in the territory.
The presented case study assessed CF of year 2015 related the whole fleet involved in door-to-door collection of municipal solid waste without taking into account treatment processes. In addition, a future scenario, in which part of the current fleet is replaced by compressed natural gas engine (CNG) based vehicles, was assessed and compared to the current status. The CF was performed by adapting the SimaPro software from PRè, one of the most widely used LCA software since the nineties, by introducing fuel based analysis and creating CNG lorries. The analysis aimed at improving sustainability of Contarina's services while fostering an informed development and testing of new technologies aimed at reducing its overall greenhouse gas emissions.

Key words: carbon footprint, transport, waste management, sustainability

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