
Introduction

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Biographical notes: J.L. Lilien received his PhD in Electrical and Mechanical Engineering from the University of Liège, Belgium in 1984. He is presently a Professor at the Department of Electricity, Electronics and Computer Sciences. He is the Head of the unit Transmission and Distribution of Electrical Energy. His main area of interest concern cable dynamics, the electric power line health monitoring, the low frequency electric and magnetic field effects on human being and residential energy distributed generation. He is IEEE and CIGRE member. He has published over 100 technical papers.

This publication is dedicated to single/multiple family energy demands and management.

In a classical single family, the energy demands for CO₂ emissions are actually close to the following pattern:

- heating (natural gas or oil) about 50–60%
- electricity about 10–15%
- transportation by its own vehicle 25–40%

with a global annual production for a single family (5 people) around 15–20 tons of CO₂ for a traditional home, equipment and car.

These proceedings will be dedicated to any means available to reduce that CO₂ amount by a significant part, obviously in a Life Cycle Assessment (LCA) approach.