

Electricity and water consumption for laundry washing by washing machine worldwide

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Abstract Washing laundry is one of the most widespread housework in the world. Today, washing machines do this work in many private households, using water, electricity, chemical substances, and process time. Although energy efficiency is in the focus of many regulations which have already achieved significant improvements, the question remains, how relevant these processes are in terms of the absolute impact on resources and whether there are possibilities to improve even further by looking abroad. This survey, which is based on published data, compares the energy and water consumption for automatic laundry washing in an average private household with the total energy and water consumption of private households. Only little data are available on resource consumption for laundry washing and reliable figures based on in-use measurements are hard to obtain. But although some of the data in this report are poor, this is the first work that tries to elucidate the contribution of automatic laundry washing to the total electricity and water consumption of households in selected countries worldwide. The report estimates the resource consumption of roughly

590,000,000 washing machines in 38 countries with about 2.3 billion people, which is about one third of the world population. The results of this work show that laundry washing in private households is done with quite different amounts of electricity and water in different parts of the world both in absolute and relative comparison to the overall household consumption. But due to different consumer habits in dealing with the achieved washing performance in the different global regions, the best practice in washing laundry in a most sustainable way cannot be determined yet. Further research is needed to form a basis for a most sustainable development of resource consumption in private households.

Keywords Energy consumption · Housework practices · Laundry washing · Washing machine · Sustainability · Water consumption · Consumer habits · Global relevance

Introduction

Washing clothes, laundry, and other home textiles is one of the most widespread housework in the world. Years ago, it was hard mechanical work, and in some regions of the world, it still is. Today, washing machines do this work in many private households worldwide using water, electricity, chemical substances, and process time as resources. Due to different wash habits and practices and different types of washing

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