

## WASHING WITH THE SUN: RESULTS OF A FIELD TEST FOR THE USE OF LOCALLY GENERATED RENEWABLE ELECTRICITY AND LOAD SHIFTING IN HOUSEHOLDS

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### ABSTRACT

In a recent field test MVV Energie and the Fraunhofer institute for solar energy systems have analyzed how economic and ecological incentives are able to motivate household costumers to change their use of appliances and thereby their load profile. For this reason, in the city of Mannheim 25 households were equipped with electronic and remotely accessible meters. To improve the use of decentralized renewable electricity available from local PV-systems, all participants received a signal indicating if sufficient solar irradiation was expected for the next day. The signal recommended a specific time span to the customers when to operate their household appliances and thereby directly use locally generated renewable electricity. Results of this field test are discussed in this article, starting with a description of our motivation as well as goals and set-up of the experiment. Furthermore, we shortly introduce the psychological models related to the field test results. Then, achieved changes in consumer behavior and the influence on respective load profiles is displayed and discussed. We evaluate the results and conclude with an analysis of motivation factors for consumers to participate in such a field test. Finally, a possible long-term implementation of such a concept is briefly discussed.