

SE-20.1 Drivers for the Adoption of Domestic Electricity Storage: A Case Study from Southern Germany (S)

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The growing share of renewable energies and the ensuing fluctuations in electricity supply make a more flexible demand increasingly important – and the balancing of local distribution networks ever more complex. Domestic energy storage units pose a promising option to meet these challenges by fostering grid stabilising self-supply. Therefore, understanding the determinants of investment decisions regarding electricity storage is essential to conceptualise and enable targeted measures to foster their diffusion. This paper presents an in-depth analysis of socio-demographic, motivational and psychological factors as well as product characteristics and barriers that affect the willingness to adopt domestic energy storage units. Our study is based on a selective sample focused on solar panel owners as the main energy storage target group and is thus tailored to gain detailed insight on factors influencing and shaping the investment decision. The survey was conducted within the framework of the SWARM project, a pilot project connecting domestic energy storage units to form a virtual mass storage, which participates in the balancing market. Using correlation-based single linkage clustering, we identify four distinct types of storage customers, namely financially oriented, security oriented, idealistic and indifferent consumers. The results of binary logistic regression further reveal that investment triggers and the willingness to invest vary for the different consumer types. Our findings emphasise that a differentiated approach of storage consumer groups with segment-specific marketing and policy strategies can foster energy storage adoption and thus alleviation of local distribution networks. The research of our paper is closely tied to energy-efficient infrastructure planning in cities, the integration of new technologies and virtual power plants as well as market design to incentivise participation of the public.