

Abstract

Due to the resolution of the Federal Republic of Germany in July 2011, the energy sector will be restructured. The energy supply will turn away from fossil fuels and atomic power towards renewable energy sources. The goal is to double the percentage of renewable energy and to reach 35% of the production until 2020. This requires significant adjustments of the technical infrastructure as the expansion of the grid. These adjustments play a key role as the financing of technical and social infrastructure is problematic in times of demographic changes. In many regions the decline in population leads to an under-utilisation and to the limit of economic capacities (Libbe 2008: 18). Plans and measures regarding the energy transition offer the opportunity to demand-oriented infrastructure adjustments which ensure the capacity to act for local authorities and supply the general public.

The research focuses on the energy demand of the household sector in times of dynamic demographic changes. Private households consume 30% of the overall energy consumption. However, there are structural and spatial differences as households vary concerning household size and household age as well as their consumption of housing, goods and services differs in life-cycle. In addition, there are spatial differences regarding their socio-economic situation in life.

Socio-demographic data like the scientific-use-files of the German consumption survey (EVS) is appropriate to analyse the influence of different household characteristics on the energy consumption of a household and to forecast the energy demand of the future. Thereby, the household size constitutes the main indicator and combines the effect of economies of scale, the demographic aging and housing issues. The trend to smaller households provokes the increasing number of households and growing energy expenditures per capita in the medium term. However, the consideration of the German county level indicates that these developments are not nationwide and regional disparities are assessed.

Furthermore, the diploma thesis develops different approaches how the analysis of socio-demographic household characteristics is conferrable to other systems of technical and social infrastructure. For instance, there is the provision and disposal of drinking water or effluents as well as a suitable planning of schools, hospitals and other social infrastructure.