

**Title:** Static analysis of technical and economic energy-saving potential in the residential sector of Xiamen city

**Citation:** Guo, F.; Akenji, L.; Schroeder, P. & Bengtsson, M. (2017) Static Analysis of Technical and Economic Energy-Saving Potential in the Residential Sector of Xiamen City, Energy Journal, No 142 373-383, Elsevier.

**Official URL:** <https://doi.org/10.1016/j.energy.2017.10.042>

**More details/abstract:** Based on a household energy use survey, this paper explores the technical and economic potential of residential energy savings in a Chinese city, Xiamen. The survey adopted a similar questionnaire used by the U.S. EIA's Residential Energy Consumption Survey (RECS), covering the end-uses of cooking, water heating, plug-in appliances, lighting and space cooling. The analysis shows that the technical potential of energy savings in Xiamen's residential buildings is significant, around 20%. Of the technical potential, about two-thirds to four-fifths are cost-effective from a whole society perspective. The cost-effectiveness was evaluated by comparing the Levelised Cost of Conserved Energy (LCOCE) of advanced technical measures with the actual cost of conserved energy. The actual cost of energy is defined by adding the carbon emission cost and hidden government subsidies over the retail prices of energy. About three-quarters of the technical energy-saving potential in Xiamen come from adopting efficient household appliances, therefore, further tightening the energy efficiency standards for key household appliances and promoting wide diffusion of efficient models of appliances by various effective financial incentives are essential for achieving residential energy savings in China's "Hot Summer and Warm Winter" region where Xiamen locates.

**Version:** Published Version.

**Terms of use:** © 2017 Elsevier Ltd. All rights reserved.

<https://www.elsevier.com/legal/elsevier-website-terms-and-conditions>

This is a download from OpenDocs at the Institute of Development Studies