

The Rebound Effect of Energy Efficiency in Residential Energy Demand: Case of Saudi Arabia

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Abstract : This paper aims at linking to link residential energy efficiency to the rebound effect concept, a well-known behavioral phenomenon in which service consumption increases when consumers notice a reduction in monetary spending on energy due to improvements in energy efficiency. It provides insights on into how and why the rebound effect happens when energy efficiency improves and whether this phenomenon is positive or negative. It also shows one technique to estimate the rebound effect on the national residential level. The paper starts with a bird's eye view of the rebound effect and then dives in in-depth into measuring the rebound effect and evaluating its impact. Finally, the paper estimates the rebound effect in the Saudi residential sector through by linking pre-estimated price elasticities of demand to the Saudi residential building stock.

Keywords : energy efficiency, rebound effect, energy consumption, residential electricity demand

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