Shifting Household Power Demand across Time: Incentives and Automation*

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Abstract

Addressing renewable energy intermittency while meeting net zero emissions targets necessitates unlocking flexibility in electricity demand. As part of a randomised control trial, we offer urban Indian households simple Wi-Fi-enabled smart switches that control the operation of an appliance. We trigger 30-minute automated switch-offs through the smart switch, rewarding participants per unit of energy they avoid consuming during the event. Using data from over 800 users, we find that switch-off events lead to a 69% reduction in device usage during the event and we find no evidence of compensating effects at the household level using the users' smart meter data.

Keywords: climate change, demand-side management

JEL Codes: Q41, Q58

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