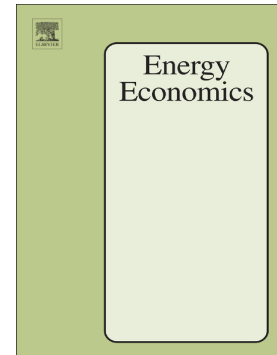


Accepted Manuscript

Heterogeneity and Persistence in the Effect of Demand Side Management Stimuli on Residential Gas Consumption

Jason Harold, Seán Lyons, John Cullinan



PII: S0140-9883(18)30159-2
DOI: doi:[10.1016/j.eneco.2018.04.034](https://doi.org/10.1016/j.eneco.2018.04.034)
Reference: ENEECO 4004

To appear in:

Received date: 19 February 2017
Revised date: 22 February 2018
Accepted date: 19 April 2018

Please cite this article as: Jason Harold, Seán Lyons, John Cullinan , Heterogeneity and Persistence in the Effect of Demand Side Management Stimuli on Residential Gas Consumption. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Eneeco(2018), doi:[10.1016/j.eneco.2018.04.034](https://doi.org/10.1016/j.eneco.2018.04.034)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Heterogeneity and Persistence in the Effect of Demand Side Management Stimuli on Residential Gas Consumption

Jason Harold^{a,b,*}, Seán Lyons^b, John Cullinan^a

^a*J.E. Cairnes School of Business and Economics, National University of Ireland, Galway, Ireland*

^b*Economic and Social Research Institute and Trinity College Dublin, Dublin, Ireland*

Abstract

Feedback on residential energy consumption has long been identified as an effective demand side management instrument to encourage household energy conservation. This paper explores the heterogeneous treatment effects of a DSM programme on residential gas consumption across different groups of households categorised by their socio-economic and household characteristics. The programme was employed in Ireland's Smart Metering Gas Consumer Behavioural Trial and the demand stimuli tested consisted of informational feedback on a household's gas usage. The paper also investigates the impact of the stimuli over time and across the distribution of daily household gas consumption. The demand stimuli are found to have very different effects across the socio-economic and dwelling characteristics of the households with older and larger households and dwellings revealed to be much more responsive to the feedback. Additionally, the results provide evidence that the impacts are persistent over time.

Keywords: household energy conservation, residential gas demand, demand side management, heterogeneous treatment effects, persistence, smart metering

JEL: C93, D03, D12, L95, Q41

1. Introduction

Demand side management (DSM) is a mechanism increasingly employed by energy suppliers and policymakers to promote behavioural change in the energy consumption of households, and to contribute to carbon abatement targets and climate change mitigation. Such programmes allow households a greater role in reducing their energy consumption and shifting their demand for energy during peak periods by either improving the information available on potential energy efficiency opportunities or by giving a financial incentive to decrease their overall energy use. The evolution of 'smart metering'¹ has

*Corresponding author

Email address: jason.harold@esri.ie (Jason Harold)

¹Smart meters provide two-way communication to households and energy suppliers of actual household energy consumption at regular intervals, for example, every half hour.

Download English Version:

<https://daneshyari.com/en/article/7350434>

Download Persian Version:

<https://daneshyari.com/article/7350434>

[Daneshyari.com](https://daneshyari.com)