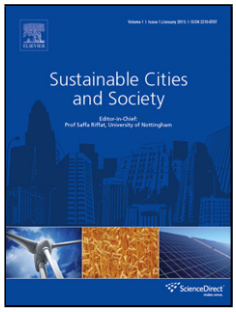
Accepted Manuscript



Title: A review of Agent-Based Modelling of Technology Diffusion with special reference to residential energy efficiency

Authors: Magnus Moglia, Stephen Cook, James McGregor

PII: S2210-6707(16)30681-3
DOI: http://dx.doi.org/doi:10.1016/j.scs.2017.03.006
Reference: SCS 602

To appear in:

Received date: 28-11-2016
Revised date: 7-2-2017
Accepted date: 11-3-2017

Please cite this article as: Moglia, Magnus., Cook, Stephen., & McGregor, James., A review of Agent-Based Modelling of Technology Diffusion with special reference to residential energy efficiency.*Sustainable Cities and Society* http://dx.doi.org/10.1016/j.scs.2017.03.006

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.

ACCEPTED MANUSCRIPT

A review of Agent-Based Modelling of Technology Diffusion with special reference to residential energy efficiency

Magnus Moglia [a, *] (corresponding author), Stephen Cook [a], James McGregor [b]

[a] CSIRO Land and Water, Ian Wark Building (B203), Clayton South VIC 3169, Australia

[b] CSIRO Energy Technology, Newcastle NSW 2300, Australia

*Corresponding author: magnus.moglia@csiro.au, Phone: +61 3 9545 2376

Highlights

- Energy efficiency is important for reducing carbon emissions
- Policies are adopted to increase residential energy efficiency
- Policy formulation in this space can be supported by analytical tools
- Traditional equations based diffusion modelling is a limited approach
- Agent Based Modelling addresses limitations of previous methods

Abstract

Residential energy efficiency is an important strategy for reducing greenhouse gas emissions. There are many technologies that help improve residential energy efficiency, and in fact, increased energy efficiency has already helped reduce global greenhouse gas emissions significantly in the past. However, with greater innovation, further improvements can be made and improving energy efficiency is an ongoing activity. Policymakers around the world are putting strategies in place to speed up the adoption of energy efficient technologies and practices, but ultimately this process is based on choice by residents themselves. Human decision making and choice however is a very complex issue, and complex computational tools are required in order to analyse and/or predict the impact of various policies. Traditionally, equation-based models such as Bass and Choice models have been used to describe the diffusion of technologies in a population, but certain limitations have been identified. This

Download English Version:

https://daneshyari.com/en/article/4928045

Download Persian Version:

https://daneshyari.com/article/4928045

Daneshyari.com