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**Programme Area:** Buildings

**Project:** Building Supply Chain for Mass Refurbishment of Houses

**Title:** Executive summary of the customer value methodology report

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**Abstract:**

Please note this report was produced in 2011/2012 and its contents may be out of date.

**Context:**

This project looked at designing a supply chain solution to improve the energy efficiency of the vast majority of the 26 million UK homes which will still be in use by 2050. It looked to identify ways in which the refurbishment and retrofitting of existing residential properties can be accelerated by industrialising the processes of design, supply and implementation, while stimulating demand from householders by exploiting additional opportunities that come with extensive building refurbishment. The project developed a top-to-bottom process, using a method of analysing the most cost-effective package of measures suitable for a particular property, through to how these will be installed with the minimum disruption to the householder. This includes identifying the skills required of the people on the ground as well as the optimum material distribution networks to supply them with exactly what is required and when.

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## ETI Executive Summary

<b>Programme:</b>	Buildings
<b>Project Name:</b>	Optimising Thermal Efficiency of Existing Housing
<b>Deliverable:</b>	BU1001 / WP5.2 – Customer Value Methodology

## Introduction

UK Residential buildings account for ~27% of the UK energy production, ~26% of CO<sub>2</sub> emissions and 23% of GHG emissions. 82% of the energy consumed in the UK residential buildings is for space heating and hot water. If the demand on the UK energy system from housing can be reduced then this will have a significant impact on CO<sub>2</sub> emissions and reduce the level of low CO<sub>2</sub> energy generation required.

The number of domestic dwellings in the UK is expected to rise to 32 million by 2050 from 26 million currently, of which 21 million are expected to remain in 2050. The refurbishment of existing dwellings is therefore a significant factor in achieving the 2050 target CO<sub>2</sub> reduction target.

This project is focussed on the refurbishment of the existing UK housing stock to improve its thermal efficiency and to investigate ways the refurbishment process can be accelerated at a national level.

The key outputs from the project are:

- A model capable of running “what if” scenarios for a range of UK house types showing the retrofit technologies required to optimise CO<sub>2</sub> reduction, minimise cost and maximise comfort/value to the customer
- A model capable of running scenarios at the local, regional and national level to identify the CO<sub>2</sub> impact and cost of various mass retrofit plans
- Defined delivery mechanisms (policies, supply chain requirements etc) for retrofitting the domestic housing stock at a sufficiently high rate to impact national climate change targets

Work Package 5 of the Optimising Thermal Efficiency of Existing Homes Project seeks to focus on the customer experience and requirements of domestic retrofit, developing an understanding of the customer (in most cases, the resident), exploring the different values held by different segments of the UK population and gaining valuable insight into how to

design a number of attractive value propositions that will engage the different segments of the UK population.

Deliverable 5.2, Customer Value Methodology, builds on the work carried out in Deliverable 5.1, Defining the Customer, to develop a proposed segmentation hypothesis to shape the later deliverables in Work Package 5 as well as support deliverables across the OTEoEH project (such as supporting Work Package 4's development of value propositions for different customer segments).

## Basis of Designs

A number of consumer segmentation methodologies were considered to assess their suitability for application to the OTEoEH project, this built on work previously carried out on the ETI's Micro-DE project as part of deliverable D1.3. The Micro DE project and the OTEoEH project have a close working relationship due to their complementary goals.

The Micro-DE project considered the following segmentation methodologies:

- The ACORN system (Consolidated Analysis Centres Incorporated – CACI)
- The CAMEO system (Eurodirect)
- The Mosaic system (Experian)
- The Energy Savings Trust system (based on Experian's Mosaic)

The objective of the Micro DE segmentation work was to assess the suitability of existing segmentation approaches to support modelling of energy consumption within the home. Its conclusion was that modelling occupant behaviour in the domestic sector is a complex task, governed by various environmental, psychological and social factors. In the absence of a well tested theory as well as a lack of clear identification of how segmentation models impact energy use (especially regarding Micro DE technologies), occupant behaviour models need to be built on available empirical data, such as Warm Front and HEED. A simple comfort take back factor and price elasticity should also be considered.

Within the OTEoEH project specifically the following additional segmentation methodologies were considered:

- DEFRA's Framework for Pro-environment Behaviours
  - o Primarily a tool to investigate environmental behaviour (not values). The objectives of this approach were felt to be too broad for the OTEoEH project, also it was felt that at 3 years old the policy landscape may have progressed and devalued the segmentation since its inception.

- Cultural Dynamics Values Modes
  - o A more values driven approach to segmentation than DEFRA's, but not designed with building retrofit in mind. Discussions were held with Cultural Dynamics regarding opportunities for developing their approach for the OTEoEH project, however this was not felt to go far enough to meeting the projects needs.
- Energy Savings Trust Trigger Points
  - o Felt to be the closest of the 3 models to retro-fit segmentation, however still in development

As described above each approach was found to have its own positive points, however none were felt to address the requirements of this project. As such it was felt that a retrofit specific segmentation approach was required.

## Results summary

The Experian Mosaic segmentation approach was felt to be the closest to meeting the OTEoEH project requirements, the principal advantages being:

- 440 data values for each UK household covering demographic data, property data and attitudinal data
- Data for every UK household at individual household level, ensuring the segmentation used for the project would be based on and validated by real UK customers
- Up-dated at least twice yearly with new data
- Various positive recommendations from EDF Energy and EST

Experian also hold a related Green Segments product which defines the UK population in one of ten different groups based on their eco-attitudes. Green Segments identified the drivers and barriers of behaviours, including consumers understanding of green initiatives and the terminology used to describe their carbon footprint, their sense of risk, accountability and brand awareness.

It was agreed with Experian that a combination of the Mosaic and Green segments datasets would be developed for the OTEoEH project. The basic methodology being:

- 1) Experian produce a cross-tabulation of their 69 Mosaic public sector segments and 10 Green Segments datasets. This enables the identification of high concentrations

of correlation between standard Mosaic variables with variables indicative of attitudes and values attached to the Green Segments database

- 2) Experian licensed basic summary information for each of the 69 Mosaic segment types and 10 Green segments to allow the consortium project team to describe these segments further.
- 3) Workshop held between Experian and the project consortium to allow a number of project specific segments to be fully described based on access to the full Mosaic and Green Segments dataset.

The outcome of this was the definition of 10 segments for the consortium to focus retrofit activities around for the remainder of the project. On analysis of the segments clear links were found between age, affluence and attitudes to green issues and energy efficiency.

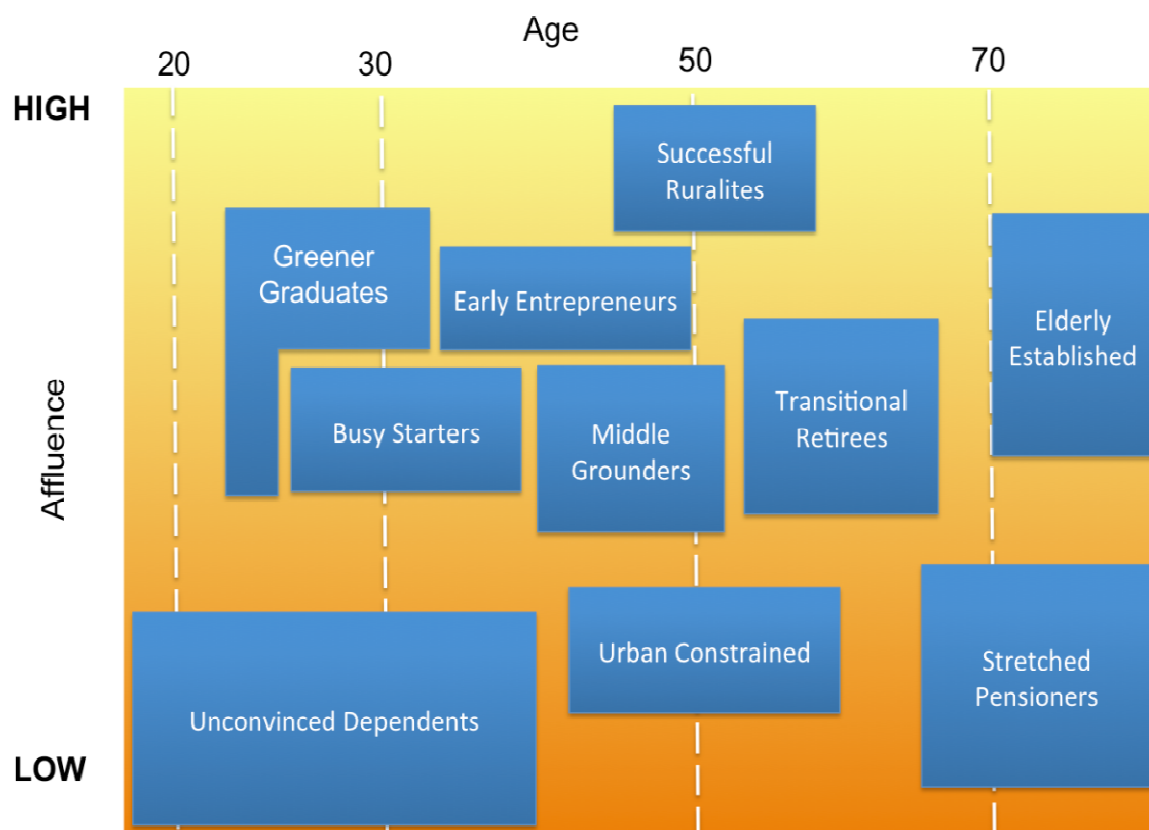
## Key findings

The 10 segments identified are as follows:

- Greener Graduates
  - Characterised as 'well educated singles living in purpose built flats'
- Busy Starters
  - 'Childless new owner-occupiers in cramped new homes'
- Unconvinced Dependents
  - 'Vulnerable young parents needing substantial state support'
- Early Enterprisers
  - 'Early middle-aged parents likely to be involved in their children's education'
- Middle Grounders
  - 'Middle income families living in moderate suburban semis'
- Successful Ruralites
  - 'Rural families with high incomes, often from city jobs'
- Urban Constrained
  - 'Older families in low value housing in traditional industrial areas'
- Transitional Retirees
  - 'Empty nester owner-occupiers making little use of public services'
- Elderly Established

- 'Better-off empty nesters in low density estates on town fringes'
- Stretched Pensioners
  - 'Older people living on social housing estates with limited budgets'

As described above there are clear links identified between age, affluence and attitudes to green issues, including energy efficiency. This allows the segments to be plotted against axis of age and affluence as shown below. Note that the size of the boxes does not indicate the number of people in each segment.



As they stand these segments cover around 20% of the UK population, however it is felt based on analysis of the Experian data that by carefully identifying common traits between these consumer groups and adjacent ones in the Experian model then this coverage can safely be increased to over 60% of the UK population.

### Further work

Deliverable 5.1 within work package 5 identified a number of Value that consumers may have which are relevant to their take-up of retrofit, supplemented by addition values identified through the 5.2 deliverable.

These values and the consumer segmentation model defined in the D5.2 deliverables will form the basis for two major consumer engagement exercises remain to be completed in Work Package 5, these will encompass:

- 1) a postal survey of 20,000 UK householders
- 2) focus groups with customer segment groups as defined above
- 3) 'Virtual retrofits' to test various retrofit propositions identified by the project as a whole
- 4) Retrospective interviews with individuals who have been through a retrofit, so as to understand which values

These activities will allow the value metrics to be validated and the values of different customer segments to be better understood. This will allow the design of targeted propositions that are most attractive to different groups. It will also highlight which groups are easier to engage with and which may require more effort in terms of the design of retrofit proposals.

In addition the work on consumer segmentation in Work Package 5 will also be overlaid with the individual building and stock modelling work carried out in work packages 1 and 2 so that it will be possible to target key consumer groups in key building types for retrofit measures.

## References

References and key background data are contained within the report.