



ict for **sustainable** homes

November 17-19, 2010 - Plaza Hotel, Nice, France



Putting the **consumer** at the heart of sustainable product and service innovation

Tashweka Anderson
ICT for Sustainable Homes, 2010
Nice, France



Global low-carbon ICT project manager, The Climate Group

The Climate Group is an independent non-profit organization working with leading companies, states and cities around the world to show that cutting carbon makes good sense not just for the environment, but for jobs and economic growth.

Since 2004, we have been bringing together some of the world's biggest companies and most influential government leaders to tackle climate change and unlock a clean industrial revolution.

MD, Anderson Brown Ltd

A|B is a sustainability consultancy. We help organizations, communities and groups understand, manage and reduce their environmental and social risks. Our specialisms include collaboration & user engagement for sustainability.

Barriers to innovation

Regulatory Barriers

Utilities business model based on making profits by selling more power
Relevant policy drivers come from multiple sectors

Informational Barriers

Lack of awareness of benefits of open energy information among consumers, lack of awareness among 'customers' such as public officials about how to implement alternatives.

Lack of Cross Sector Implementation

Solutions that can operate across domains are still not widely adopted

Financial Barriers

Solutions will require sharing risk between public and private sectors, to capture 'diffuse' savings

Unclear Business Case

Often long payback periods for energy efficiency investments, lack of incentives from developers and owners to invest in smart building technologies

Consumer engagement and support for behaviour change

Consumer engagement and support for behaviour change on a large scale is possible but the financial incentives are not there. Consumer engagement and developing demand is cited as the most challenging barrier to innovation in the ICT for sustainable homes area.

Snapshot from the market

Increasing awareness of the importance of the the consumer

Baltimore Gas and Electric's initial smart grid plan was rejected by U.S. regulators primarily for its lack of a consumer engagement plan. Regulators required BGE to submit a clear plan on how to educate and engage consumers about the new technology and pricing plans. Of the well over 300 smart metering and smart grid projects underway globally, consumer education (amongst other factors) remains a challenge – Source: Bloomberg New Energy Finance October 2010

It is becoming clear that engaging consumers in smart grid and smart metering is a key element of successful projects. Achieving sustainability, energy and climate objectives will require their full participation – Source: The Climate Group & Google, Roundtable discussion – Empowering UK Energy Consumers: A consumer-led vision for energy innovation, July 2010

Products and Services for a sustainable home

Where we are today



Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Access to information

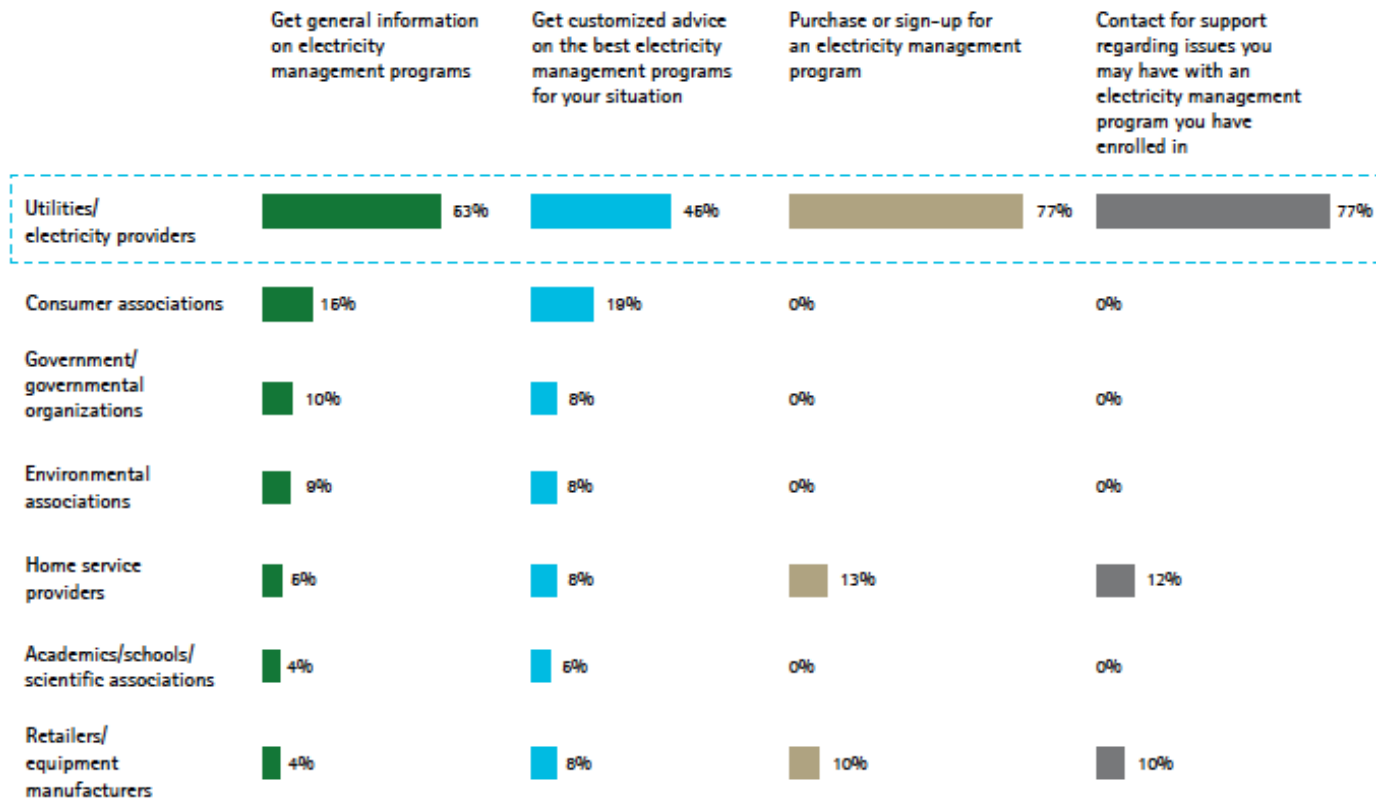
- Giving customers access to more direct feedback on consumption can lead to 5-15% savings in households (Source: Oxford University)
- But consumers differ in their preferences around the source of the information and how the information is presented to them

Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Figure 9.

Who would be your first choice to deal with/be in contact with regarding each of the following situations?

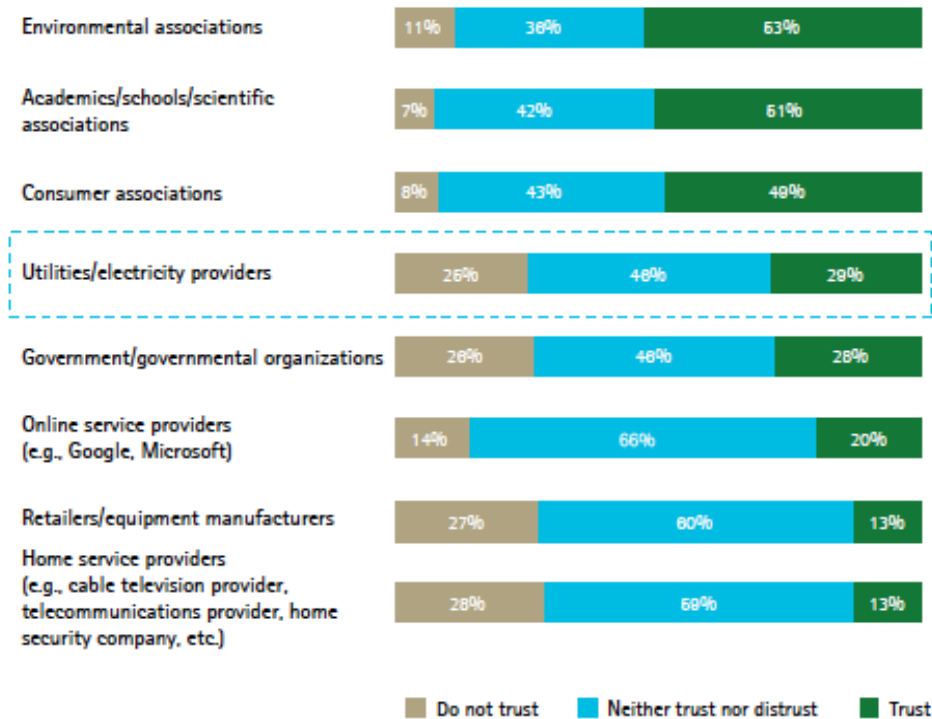


Source: Understanding Consumer Preferences in Energy Efficiency
 Base: All respondents

Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Figure 10.
What organizations do you trust to inform you about actions you can take to optimize your electricity consumption?



Source: Understanding Consumer Preferences in Energy Efficiency
Base: All respondents

Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Automation and remote management

- Moderate to strong resistance on the part of consumers to automation and remote management
- “There is a limited degree of elasticity between “impact on the electricity bill” and “utility control.” No matter the impact, consumers are more likely to sign up if they retain some control over their home appliances. Also, when consumers are provided with some control over their home appliances, they are more likely to respond to the incentive of saving money” — *Source: Understanding consumer preferences in energy efficiency*

Understanding Consumer Preferences in Energy Efficiency

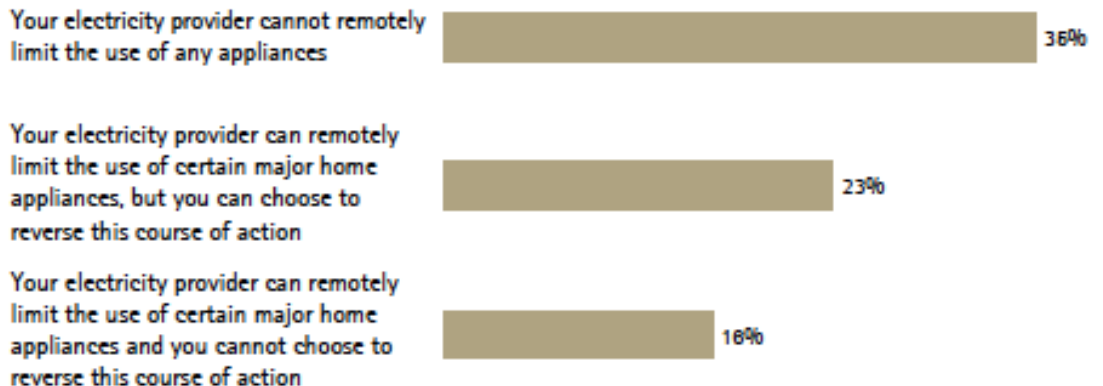
Fragmented and non-traditional consumer preferences

There is an inverse relationship between consumer adoption of electricity management programs and utility control of home appliances. Consumers are more likely to sign up for a program where utilities/electricity providers cannot remotely limit the use of any home appliances (See Figure 16).

Figure 16.

Impact of utility control on program adoption rates.

% of sign up
(certainly + probably)



Source: Understanding Consumer Preferences in Energy Efficiency

Base: All respondents

Methodology note: Simulation tested with "no self-action required," "no reduction of environmental impact" and "no impact on your electricity bill" components

Understanding Consumer Preferences in Energy Efficiency

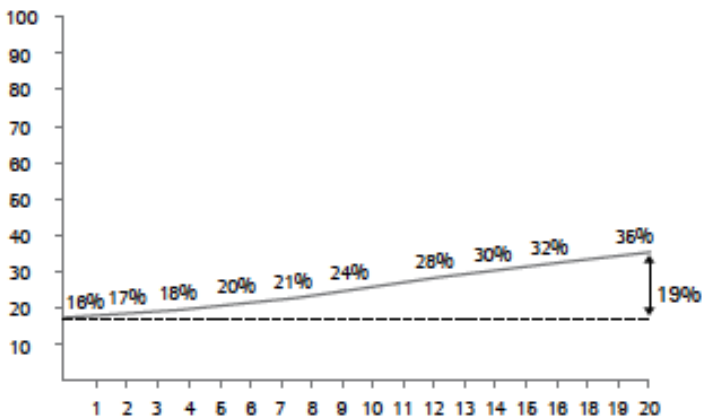
Fragmented and non-traditional consumer preferences

Figure 17.

Utility control versus bill savings.

Option 1: Your electricity provider can remotely limit the use of certain major home appliances and you cannot choose to reverse this course of action

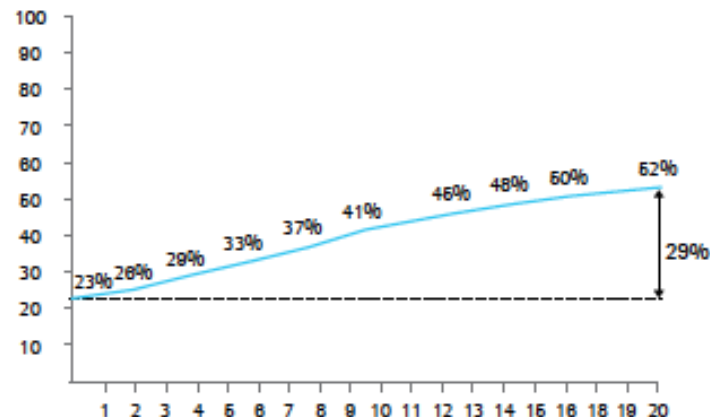
% of sign up
(certainly + probably)



% of saving in electricity bill

Option 2: Your electricity provider can remotely limit the use of certain major home appliances, but you can choose to reverse this course of action

% of sign up
(certainly + probably)



% of saving in electricity bill

Source: Understanding Consumer Preferences in Energy Efficiency

Base: All respondents

Methodology note: Simulation tested with "no self-action required" and "no reduction of environmental impact" components

Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Management according to consumption patterns & standard demographics

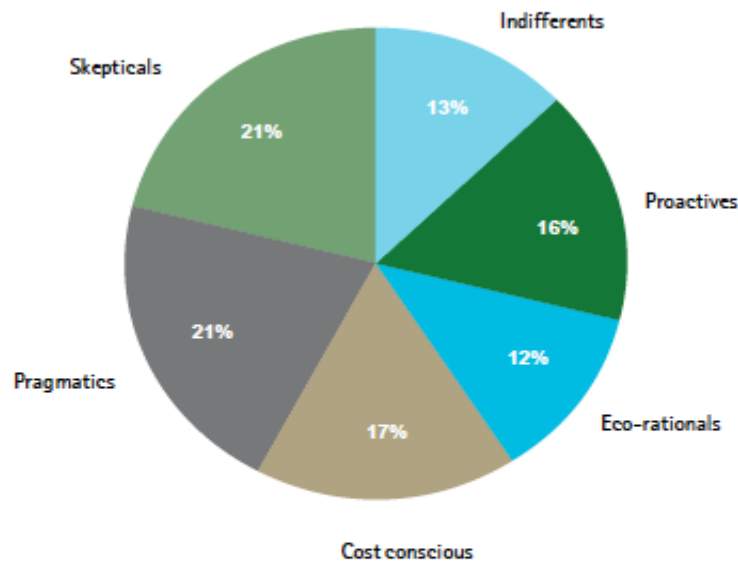
- “Consumers’ readiness to enroll in electricity management programs is determined by a range of preferences that go well beyond the criteria traditionally applied to energy purchasing decisions” — *Source: Understanding consumer preferences in energy efficiency*

Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Figure 20.

Six consumer segments have been identified according to their preferences for the different components of electricity management programs.



Electricity management program components:

- Impact on your electricity bill
- Utility control
- Your environmental impact
- Self-action required

Source: Understanding Consumer Preferences in Energy Efficiency

Base: All respondents

Methodology note: Results based on a conjoint analysis

Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Proactives (16%)

Adoption attributes:

- Highest willingness to take action to reduce the use of major appliances in their home
- Lowest interest in the reduction of their impact on the environment
- Higher preference for in-person contact at their home to get general information about electricity management programs

Demographics +:

- Higher proportion use electricity to heat their home

Eco-rationals (12%)

Adoption attributes:

- Highest interest in the reduction of their impact on the environment
- Higher impact of social pressure to drive them to take action
- Highest positive perception of a person having enrolled in an electricity management program
- Higher willingness to decrease level of comfort but remain sensitive to savings in their electricity bill
- Higher interest in energy-efficiency products and services such as smart meters, solar panels, renewable energy, home-energy packages, loyalty programs or technology recycling

Demographics +:

- More often women
- Often seek advice before purchasing and are ready to pay more for quality products

Cost conscious (17%)

Adoption attributes:

- Highest sensitivity to electricity bill savings
- Higher impact of social pressure to drive them to take action
- Higher positive perception of a person having enrolled in an electricity management program
- More likely to be discouraged from adopting an electricity management programs if their bill was more complicated or if it required more time to manage their electricity usage
- Higher level of trust toward utilities/electricity providers

Demographics +:

- More often women

Understanding Consumer Preferences in Energy Efficiency

Fragmented and non-traditional consumer preferences

Pragmatics (21%)

Adoption attributes:

- Lower acceptance of utility control
- Higher sensitivity to electricity bill savings
- More ready to switch products and brands
- Less prompt in adopting new technologies

Demographics +:

- More often men

Skepticals (21%)

Adoption attributes:

- Lowest acceptance of utility control
- Lowest trust toward utilities/electricity providers
- Lower sensitivity to electricity bill savings
- Lowest sensitivity to social pressure
- More likely to seek advice with consumer associations to get some information about electricity management programs

Demographics +:

- Higher income
- Higher proportion use natural gas to heat their home

Indifferent (13%)

Adoption attributes:

- Lowest willingness to take action to reduce the use of major appliances in their home
- Higher acceptance of utility control
- Lower proportion believe electricity has a negative impact on the environment
- Lower proportion think they understand enough about the actions they can take to optimize their electricity consumption
- Potential inhibitors would be the bill complexity and time commitment

Demographics +:

- More often men
- Below 24 years old
- Lower income
- The proportion of early adopters of new technologies and new trends is the highest in this segment

Understanding Consumer Preferences in Energy Efficiency

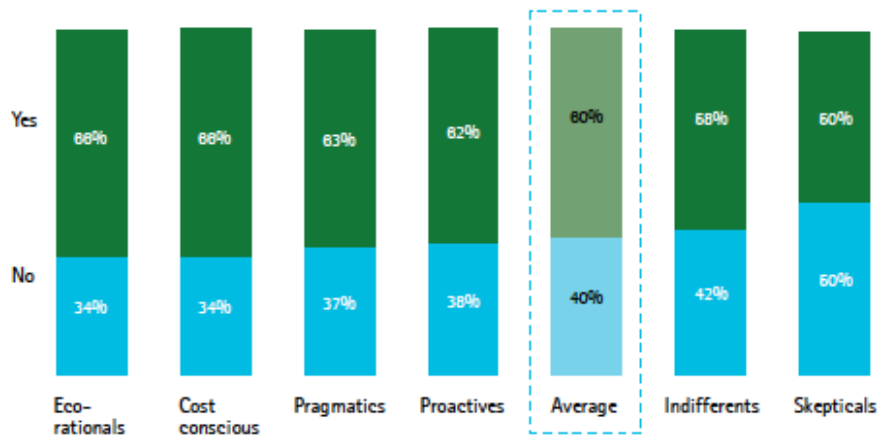
Areas of great promise

- “Community” Engagement

Despite their divergent viewpoints, consumers in every segment say social pressure is a key driver to take action. Two-thirds of Eco-rationals indicate they are driven to action by social pressure. Even among the Skepticals, 50 percent of respondents agree that the attitudes of friends, family and colleagues are a key driver to take action (see Figure 23).

Figure 23.

Do you feel any social pressure (from family, friends, co-workers, community groups, etc.) to do any of the following (recycle products, reduce vehicle usage, conserve water, reduce natural gas consumption, reduce electricity consumption)?



Source: Understanding Consumer Preferences in Energy Efficiency
Base: All respondents

Understanding Consumer Preferences in Energy Efficiency

Areas of great promise

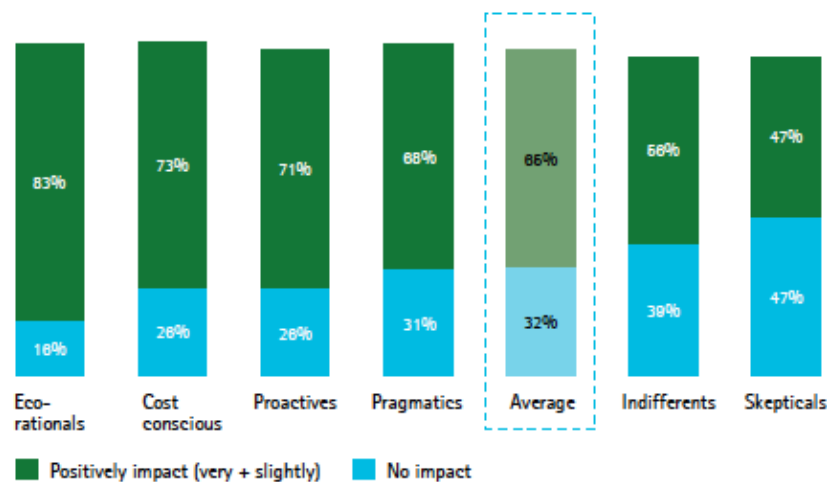
- “Community” Engagement

Consumers in nearly all segments, with the sole exception of the Skepticals, say they have a higher opinion of someone who enrolls in an electricity management program (see Figure 24). Overall, nearly two-thirds of consumers take a positive view of someone joining an electricity management program.

The findings suggest that adoption of electricity management programs may be increased by tapping into social pressure.

Figure 24.

How would it impact your perception of an individual if this person told you that he/she has enrolled in an electricity management program?



"Negative impact" responses not shown

Source: Understanding Consumer Preferences in Energy Efficiency
Base: All respondents

Understanding Consumer Preferences in Energy Efficiency

The Innovation Challenge

1. Simply installing smart metering devices and in-home displays will not drive lasting consumer adoption on its own
2. Providers will need new consumer-centric competencies and programs to attract and maintain a diverse consumer market
3. Consumer behaviors for energy-efficiency solutions are highly complex with broad diversity in perceptions, attitudes and preferences

Understanding Consumer Preferences in Energy Efficiency

The Innovation Challenge

4. Consumer energy support competence should include advanced insight and segmentation, new service channels and advanced products, and integrated education program
5. Providers need to build increased consumer knowledge by engaging in a multi-tiered awareness program that involves collaboration with stakeholders such as government, environmental groups and an array of local and online communities.

Understanding Consumer Preferences in Energy Efficiency

Real-world experimentations

- “Community” Engagement

EnergyTIC: ICP PSP – Energy and water efficiency in social housing (under negotiation)

Brent Going Green: Shortlisted for the 2010 International Green Awards in two categories, **1) Best Green Use of Online Media Award (Banners / Social Media Campaigns / Websites) and 2) Best Green Use of Mobile Apps and Technologies.**

The Climate Group’s Smart2020 program: ICT demonstration projects at home, building and city-level. Engagement is becoming a key component in some pilots



Understanding Consumer Preferences in Energy Efficiency

The opportunity

“Those ... that understand and leverage the perceptions, behaviors and values of their consumers will ultimately generate the most value in the new energy era..”

Greg Guthridge, managing director, Accenture Retail and Business Services for Utilities

Source: Understanding Consumer Preferences in Energy Efficiency



Tashweka Anderson

tanderson@theclimategroup.org

tashweka@anderson-brown.com

+44 77 9634 3863