



CHANGING BEHAVIOUR

Energy for a Change

Energy Use & Behavioural Change
A workshop for Practitioners

Hotel TITANIA
Athens, June 16th 2009

Why change energy use behaviour?

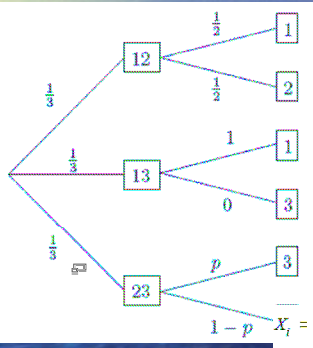
- Worsening of the energy related problems
 - Climate change
 - Security of supply
 - Continuously growing energy demand
- Current technological development may only provide part of the solution
- Continuous and long lasting effort is needed
- Reduces the risk of the “rebound” effect
- Very effective energy efficiency measure
- Part of a generalised ecological consumer’s behaviour

Two types of energy related behaviour

Within the Changing Behaviour Programme two types of energy related behaviour are identified and studied:

- Efficiency behaviour
 - One shot behaviour e.g. purchase of energy efficient appliances
- Curtailment behaviour
 - repetitive effort to reduce energy use

The consumer's behaviour An energy modeler's perception



$$\text{logit}(p) = \log\left(\frac{p}{1-p}\right) = \log(p) - \log(1-p)$$

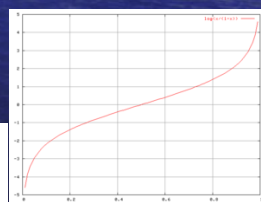
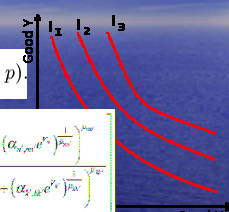
$$p_{e, \text{choice}} = \frac{\sum_{i=1}^n \frac{(\alpha_{i, \text{choice}} e^{z_i})^{\frac{1}{\sigma}}}{(\alpha_{i, \text{choice}} e^{z_i})^{\frac{1}{\sigma}} + (\alpha_{j, \text{choice}} e^{z_j})^{\frac{1}{\sigma}}}}{\sum_{j=1}^n \frac{(\alpha_{j, \text{choice}} e^{z_j})^{\frac{1}{\sigma}}}{(\alpha_{j, \text{choice}} e^{z_j})^{\frac{1}{\sigma}} + (\alpha_{k, \text{choice}} e^{z_k})^{\frac{1}{\sigma}}}}$$

$$\frac{dx}{dy} = -\frac{1-\alpha}{\alpha} \left(\frac{x}{y}\right)$$

$$C = \left[\sum_{i=1}^n a_i^{\frac{1}{\sigma}} c_i^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}}$$

$$X_i = [\alpha_i/P_i]^{\sigma} \left[\sum_{j=1}^n \alpha_j P_j^{1-\sigma} \right]^{-1} E$$

$$= [\alpha_i/P_i]^{\sigma} P^{\sigma-1} E, \text{ where } \rho = 1 - (1/\sigma)$$



$$\log(R) = \log\left(\frac{p_1/(1-p_1)}{p_2/(1-p_2)}\right) = \log\left(\frac{p_1}{1-p_1}\right) - \log\left(\frac{p_2}{1-p_2}\right) = \text{logit}(p_1) - \text{logit}(p_2)$$

$$P_{ni} = \frac{\exp(\beta z_{ni})}{\sum_{j=1}^J \exp(\beta z_{nj})}$$

Some remarks on the end user's behaviour

- Heterogeneous agents; different individuals -target groups
- Irrationality (?); Habits and conventions vs conscious (rational) decision making
- Social context is of outmost importance – reciprocal relationship between individual and context
- Change is a process! It needs time and (positive) energy

The role of intermediaries

Traditional approach:

Energy efficiency (DSM) programmes designed and implemented by central policy organisations

Novel approach:

Energy efficiency (DSM) programmes designed and implemented by central policy organisations

AND

intermediaries (local energy agencies, ESCOs, NGOs, PPP, energy professionals)

The role of intermediaries

- They are closer to the end user than central policy making organisations
- They are usually oriented and focused in specific target groups and geographical areas
- They are often part of the end user's overall context
- They understand and influence more effectively end user's behaviour

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Three examples of recently announced DSM projects in Greece

- Subsidisation of energy efficient electric appliances for households
- Subsidisation of energy efficient retrofits for residential houses and apartments
- Simplification of the process for installation of PV systems at residential buildings – solar roofs

Successful, with clear and direct results but
Do they lead to Behavioural Change ?

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Envisaged benefits of the workshop

- Familiarisation with frontline European research on energy behavioural change
- Understanding the special characteristics of DSM programmes design
- Contribute to the conceptual framework of the design of a practical tool for practitioners
- Opportunity for networking – Get new project ideas!

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Saturday, 28 March 2009, 20:29 pm

