The status of efficient domestic lighting in Hungary and the challenges to improve it

CENTRAL EUROPEAN UNIVERSITY

EnERLIn
Energy Efficient Residential Lighting Initiative

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About the project

Goals of the ENergy Efficient Residential Lighting INitiative (ENERLIN) project:
- to study the penetration level of energy efficient lighting (mainly compact fluorescent lights – CFLs) in households, and to understand influencing, encouraging and obstructive factors
- to analyse the effectiveness of previous campaigns, and to run and evaluate pilot campaigns
- to develop a new CFL quality charter and disseminate it among stakeholders.

Project consortium: 14 countries – ESCOs, universities, research institutes, energy agencies, independent consultancies.

Hungary:
1. Review of previous CFL market studies;
2. Overview of previous campaigns, factors for success and failure;
3. Nation-wide consumer survey;
4. Generation of ideas for test-campaigns based on the findings;
5. Running a small-scale test-campaign
Importance of the research

- EU 27: constantly growing residential electricity consumption (2000 to 2005: 2%/year)
- Hungary: since 1990 residential electricity consumption grew by 21%, households were responsible for 35% of total final energy consumption as of 2000
- main factors for this growth: increasing apartment size and number of apartments, penetration of household appliances
- 10-25% of household electricity consumption = lighting
- penetration of CFLs is still low in many EU states
- EU 27: penetration of CFLs is c.50% (min. 1 CFL/household), number of CFLs is 2.7 on average
- EU 25: changing the most used incandescent light bulbs could save 11TWh energy (=electricity consumption of the residential sector in Hungary)
Research methods

Overview of past campaigns:
- desk research, interviews

Consumer survey:
- 7 blocks, 32 questions: knowledge, use, experience, information, purchase, price sensitivity and demographics
- data collection: Gallup Institute, 2007
- Sampling frame: +18 years adults, head of the household
- Number of households: 500
Campaigns

-overview of 5 CFL campaigns post-2000, their impacts and implications for future campaigns

1. Efficient Lighting Initiative (ELI) (www.eli.hu/)
2. The Light of Our Eyes (Szemünk Fénye) (www.szemunk.fenye.hu/index.html)
3. Energy School (Energia Suli) (www.energiasuli.hu/)
4. Forgó Morgó (www.energiakalkulator.hu)
5. Energy money-box (Energiapersely) (www.energiapersely.hu)
Factors for effective campaigns

- Timing (late autumn)
- Prior market research
- Communication focussed on target group(s)
- Good logo, simple message
- Multipliers (e.g. schoolchildren > families; shop assistants > customers)
CFL penetration - history

- Technology has long been available in Hungary, and easily and moderately cheaply since the 1990s
- The penetration rate* at the beginning of 1995: ca. 5% (Ürge-Vorsatz and Hauff (2001)),
- Penetration rate 19% by 1997 (ELI project Final Report) – this is considered to be due not to campaigns but other factors, such as for instance:
  - new producers entering the market, thus the previous monopoly set prices were reduced by competition,
  - electricity prices were on the other hand increasing,
  - interest in “modernising” and new technologies increased among the public
  - Campaigns were launched by new entrants as well as Tungsram (the Hungarian producer)

* Penetration rate indicating the number of households with at least 1 CFL installed
CFL penetration – our survey
78% of households have used or are using a CFL. These households have on average 14 bulbs all together, 6 of them are CFLs - significant increase

Overrepresented in CFL use are:

- Budapest and county rank cities, bigger cities
- university graduates
- electricity bill under 16€ and between 32-40€
Survey results

Segmentation

- **Regular buyers**: using CFLs at home and already bought CFL(s);
- **At home users**: using CFLs at home, but never bought one personally before;
- **Out-of-home users**: never used a CFL at home, but used or are using at other places (e.g. workplace);
- **Non-users**: never bought or used a CFL.
segments – geographic location

<table>
<thead>
<tr>
<th>Category</th>
<th>Budapest</th>
<th>county rank cities</th>
<th>city</th>
<th>village</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-users</td>
<td>11%</td>
<td>19%</td>
<td>26%</td>
<td>44%</td>
</tr>
<tr>
<td>out-of-home users</td>
<td>38%</td>
<td>7%</td>
<td>20%</td>
<td>34%</td>
</tr>
<tr>
<td>users at home</td>
<td>8%</td>
<td>16%</td>
<td>37%</td>
<td>39%</td>
</tr>
<tr>
<td>regular buyers</td>
<td>19%</td>
<td>22%</td>
<td>28%</td>
<td>32%</td>
</tr>
</tbody>
</table>
Segments – age groups

- **non-users**: 3% 7% 9% 40% 41%
- **out-of-home users**: 3% 34% 11% 23% 29%
- **at home users**: 11% 8% 14% 26% 41%
- **regular buyers**: 6% 12% 17% 33% 31%
The majority of respondents (nearly 70%) experienced quality difference among CFLs.

<table>
<thead>
<tr>
<th>Category</th>
<th>Satisfaction Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.2</td>
</tr>
<tr>
<td>Out-of-home users</td>
<td>1.8</td>
</tr>
<tr>
<td>At home users</td>
<td>4.3</td>
</tr>
<tr>
<td>Buyers</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Reasons for the use of CFLs

In case of “at home users” the importance of the prevalence of CFL among their peers is significantly higher (3.5) than on average (2.7).

Out-of-home users: least interested in environmental protection and light characteristics, but extremely important to have immediate light.
Reasons for non-purchase

To what extent would you agree with the following statement: Through longer lifetime and lower energy consumption of CFLs their higher purchasing cost will be recovered? (5-point scale)

- **non-users**: 3.9
- **out-of-home users**: 4.0
- **at home users**: 4.7
- **reg. buyers**: 4.6
Reasons for non-purchase

Importance of factors for non-purchase (5-point scale)

- habit of using incadescent: 2.6
- return only on the very long term: 2.1
- uses only CFLs: 1.9
- have to wait for full light: 1.8
- shorter lifetime than promised: 1.8
- bad light characteristics: 1.8
- I do not care: 1.8
- weak light: 1.7
- does not fit in lamps: 1.7
- do not understand the use of it: 1.6
- don't like it: 1.5
- uses only halogens: 1.3
- not available: 1.3
Where would you like to get info?

Information sources

- **shop assistant, retailer**: 62.9%
- **friends, relatives**: 26.8%
- **out of home users**:
  - **TV, radio**: 15.8%
  - **consumer and other magazines, tests**: 14.8%
  - **brochures, posters, leaflets**: 17.6%
  - **press article**: 14.1%
  - **ads**: 15.2%
  - **internet, website of manufacturer**: 19.3%
  - **internet, independent website**: 14.1%
  - **product info, shop window materials**: 9.7%
  - **school, univ.**: 9.0%
  - **would not ask anyone**: 9.0%
  - **else**: 

Users at home: friends, relatives

Out of home users: shop assistants, internet, TV, radio

Non-users: friends, shop assistants, magazine articles
Where would you like to buy your future CFL most? (multiple response)

- Lamp and electrotechnic shop: 81.3%
- Home improvement, do-it-yourself stores: 43%
- Supermarkets, hypermarkets: 39.4%
- Home products, furniture stores: 22.9%
- Discounter: 21.9%
- Village small shop: 15%
- Internet: 9.3%
- Else: 3.3%
- Wherever: 2.5%
- Chinese market: 0.9%
Implications for the test-campaign
-the penetration of CFLs increased significantly in the last 10 years (from 20% to nearly 80%), but there is still potential for further increase in the domestic sector

-primary target group: out-of-home users; secondary target group: users at home and regular buyers

-primary information sources: retailers, shop assistants, internet
Test campaign features

- Ran in November 2008 in 3 Budapest stores:
  - 1 specialist lighting/electrical store (Tungsraum)
  - 1 DIY store (Bauhaus)
  - 1 hypermarket (Cora)
- 2 for 1 CFL offer sponsored by GE (500 free CFLs)
- Purchasers had to fill in a questionnaire giving basic demographic information and purchasing history
Test campaign results

- Variable take-up in the different locations (150 in Tungsraum, 60 in Bauhaus, 7 in Cora)
- Variation may be due to differences in shop assistant time, motivation, knowledge
- 83% had previously bought CFLs (cf. 65% in survey) so the campaign did not fully reach the main target group
- 80% asked shop assistants for more information and 93% who did so found the information they received helpful – supports survey findings that shop assistants can be an important and trusted source of information
- more preparatory work is needed for campaigns in larger stores
Thank you for your attention!

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Supplementary slides

Center for Climate Change and Sustainable Energy Policy

Central European University
# Campaigns

<table>
<thead>
<tr>
<th>Name of the campaign</th>
<th>Target group</th>
<th>Timeframe</th>
<th>Main campaign elements</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELI Efficient Lighting Initiative</td>
<td>Lower income and lower education group of the population; target group were school children</td>
<td>2002-2003</td>
<td>Local TV and radio, school presentations, ads and quiz games, press conferences, ads and articles, retail campaign (POS, electrometer, ELI logo)</td>
<td>-800 presentation, 40 press articles, 14 quiz games, 300 spots, presence in 50 big retail units, several professional articles.</td>
</tr>
<tr>
<td>Light of Our Eyes</td>
<td>Public institutions (children, families indirectly)</td>
<td>2006-</td>
<td>Renovation of buildings</td>
<td>2200 buildings</td>
</tr>
<tr>
<td>Energy School</td>
<td>Primary school children</td>
<td>2006</td>
<td>Fizibus</td>
<td>Na</td>
</tr>
<tr>
<td>Forgo Morgo</td>
<td>Population</td>
<td>2007-</td>
<td>Encouragement for changing incandescent to CFLs, website, TV and local retail campaigns</td>
<td>Na</td>
</tr>
<tr>
<td>Energy money-box</td>
<td>Population, SMEs</td>
<td>2007-</td>
<td>Website</td>
<td>Na</td>
</tr>
</tbody>
</table>
Segments – type of education

- **non-users**
  - 31% primary school
  - 33% vocational school
  - 19% high-school
  - 16% university

- **out-of-home users**
  - 0% primary school
  - 25% vocational school
  - 43% high-school
  - 33% university

- **at home users**
  - 23% primary school
  - 21% vocational school
  - 29% high-school
  - 26% university

- **regular buyers**
  - 14% primary school
  - 17% vocational school
  - 38% high-school
  - 31% university
Segments and electricity bill (€)

- **total**
  - 16% 20% 18% 14% 16% 7% 8%

- **non-users**
  - 19% 24% 18% 14% 14% 5% 7%

- **out-of-home users**
  - 19% 0% 23% 18% 28% 6% 6%

- **users at home**
  - 6% 26% 28% 6% 12% 14% 8%

- **regular buyers**
  - 18% 19% 16% 15% 16% 6% 9%

0% 20% 40% 60% 80% 100%

-16 16-24 24-32 32-40 40-60 60+ na

3CSEP
Purchasing experiences and past

Time of first purchase

- **total**
  - n.a.: 12%
  - once: 25%
  - rarely: 36%
  - regularly: 26%
- **more than 5 yrs ago**
  - n.a.: 6%
  - once: 34%
  - rarely: 50%
  - regularly: 10%
- **5 yrs ago**
  - n.a.: 13%
  - once: 24%
  - rarely: 46%
  - regularly: 18%
- **4 yrs ago**
  - n.a.: 12%
  - once: 25%
  - rarely: 38%
  - regularly: 25%
- **3 yrs ago**
  - n.a.: 16%
  - once: 17%
  - rarely: 18%
  - regularly: 47%
- **2 yrs ago**
  - n.a.: 16%
  - once: 23%
  - rarely: 15%
  - regularly: 46%
- **1 year ago**
  - n.a.: 33%
  - once: 18%
  - rarely: 3%
  - regularly: 40%
- **0.5 year ago**
  - n.a.: 7%
  - once: 0%
  - rarely: 11%
  - regularly: 82%
- **n.a.**
  - once: 0%
  - rarely: 0%
  - regularly: 58%
  - not: 0%