BEHAVE. Meta-evaluation of communicative programmes aimed at consumers

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Keywords

consumers, households, behavioural change, energy efficiency, policy instruments

Abstract

Changing consumers' energy-related behaviour can significantly reduce their energy consumption. To this end, behavioural change programmes can use communicative, regulatory, and economic instruments. This paper mainly focuses on programmes using communicative instruments. When compared to programmes using economic and regulatory instruments, communicative behavioural change programmes aimed at consumers are:

- relatively easy to set up and stop
- · less expensive
- · highly visible, with clear points of departure and are often suitable for media coverage.

Therefore, communicative programmes are rather popular among policy makers and programme managers. However, programmes are often set up without taking into consideration the lessons learned from similar programmes. Due to a lack of systematic evaluations, no readily accessible source presenting the success factors for these programmes is available. The BEHAVE project (financed under the IEE-scheme) will carry out a systematic meta-evaluation of behavioural change programmes. Based on the evaluation, the project will define key factors for developing successful behavioural change programmes. The programmes evaluated will come from a selection of EU countries. Several types of communicative programmes will be evaluated: educational programmes, mass media campaigns, feedback, personal advice, community network approaches and use of new ICT tools. This paper presents the content of the BEHAVE project.

Introduction

Influencing behaviour is at the basis of reducing energy end use. To reduce the consumption of energy, we need to influence people to take different decisions, decision that will reduce the need for energy. Policy instruments can influence consumers to greatly reduce their energy consumption. For instance, Vollink (2004) and Boardman (2004) have evaluated 38 studies on "feedback" instruments over 25 years and conclude that direct feedback, provided by these feedback instruments, can influence consumers to reduce their energy use by up to 20 %.

In general, two types of behaviour exist: investment behaviour and habitual behaviour. Investment behaviour is, for instance, the decision to buy a new dishwasher, while habitual behaviour is routine behaviour such as switching on the lights when entering a room. Behavioural change programmes aim to influence both types of behaviour. These behavioural change programmes can use four types of instruments:

- 1. regulatory instruments,
- 2. economic instruments,
- 3. communicative instruments or
- 4. structural provisions.

These four types of instruments each influence behaviour in a different way (Klok, 1991). Regulatory instruments mainly influence behaviour through compulsion. Examples are gen-

eral laws and rules, specific permits, enforcement, covenants and agreements. Economic instruments influence behaviour through financial transactions. Examples are subsidies, levies, tax differentiation and financial constructions. Communicative instruments persuade. Examples include information and promotion, training, personal advice, demonstrations and benchmarks. Structural provisions work by compulsion and in a facilitating way. These include infrastructural provisions and technical interventions, like sensors that turn off/on the lights automatically. Often, a combination of instruments is used to influence people's decisions. A subsidy scheme on energy efficient appliances, for example, needs communication to make people aware of the subsidy scheme, to inform retailers, etc.

With "behavioural change programmes", we mean programmes and projects which aim to have an effect on three factors of behavioural change: motivational, facilitating and reinforcing factors. These factors affect consumers' habitual and/or investment behaviour. In the section Theoretical background, this is described in more detail, and we present a model for changing behaviour through influencing these factors.

Rationale behind the BEHAVE-project

The European Commission and Member States emphasize instruments that influence the individual consumer's decision to invest in energy-efficient appliances and change their daily behaviour to reduce their energy use. An example at the EU level is the Energy Performance of Buildings Directive (EPBD) (2002/91/EC) that requires governments to make homeowners and renters of houses aware of the energy use of their residence. Other examples are the Action Plan on Energy Efficiency (COM (2006) 545) and the End-use Efficiency and Energy Services Directive (COM (2003)739).

In 2005, the Network of European Energy Agencies (EnR) established a Working Group on Energy-Related Behaviour Issues. This was inspired by Member States' needs to share knowledge on behavioural change activities and to build upon that knowledge to design more effective behavioural change programmes targeted at consumers. This EnR Working Group currently consists of representatives from Austria, Croatia, Finland, France, Greece, Netherlands, Norway, Spain, Sweden, Bulgaria and UK) Furthermore, other Member States closely follow discussions within this Working Group.

In January 2006, the Working Group submitted a proposal (named BEHAVE) to the EU programme Intelligent Energy for Europe to increase the effectiveness of behavioural change programmes and projects in Member States. The proposal was assessed positively, and subsequently financed. The project started in December 2006. The general aim of BEHAVE is to improve behavioural change programmes and projects by learning from existing programmes and developing more effective ones. When systematically compared and evaluated, the results of behavioural change programmes and projects offer many clues to increasing their effectiveness. We can clarify benefits, avoid mistakes, adopt success stories as models, and discover practical synergic approaches. The BEHAVE project aims to contribute to this learning.

Essentially, the project is a structured literature review and meta-evaluation: we will compare and analyse existing evaluations of behavioural change programmes that have been undertaken in the recent past. Simply stated, meta-evaluation is the evaluation of an evaluation, evaluation system or evaluation

'Meta-evaluation is a method of summarizing, examining, evaluating or re-analyzing data in research and evaluation efforts. Meta-evaluation is a method of evaluation research examining evaluation methodologies, procedures, data analysis techniques, interpretation of results, and the validity and reliability of conclusions' (cit. Martin, Paula H. (1982). If insufficient existing evaluations of behavioural change programmes are available for our meta-evaluation, we will evaluate a few behavioural change programmes ourselves. This will mainly be done by interviews with the former project officers. Furthermore, BEHAVE builds on knowledge gathered in a SAVEproject (Greer, 1991). That project resulted in a practical set of guidelines to design effective behavioural change interventions. However, we still lack a systematic comparison and evaluation of these programmes at all levels. This, in turn, leads to a lack of insight into the effectiveness of the different approaches and the policy instruments used in behavioural change programmes. And, thereby, policy makers and programme managers lack a good knowledge base which raises key barriers for improvement of behavioural change programmes.

BARRIERS

• Insufficient use of existing knowledge on design and implementation of successful energy behavioural change programmes for consumers

There is an extensive body of knowledge on how to develop behavioural change programmes, mainly originating from health education programmes (Green & Kreuter, 1991, Ajzen, 1988, Bartholomew, et.al, 2001). This knowledge has been adapted and used for the development of a similar 'body of knowledge' for energy-related behavioural change programmes (Lutzenhiser, 1993). This common knowledge contains useful elements such as the need for a planned long-term approach, developing programmes starting from an objective, defining the desired change, assess the determinants of change, and then choose well-focussed instruments to influence the behaviour of the specific target groups. This kind of change-oriented approaches, instead of the more usual instrument-oriented ones, makes it possible to develop more effective behavioural change programmes. There is a direct advantage if this knowledge is made widely available to the European community of policy makers and programme managers of energy-related behaviour programmes and projects.

• Lack of evaluation

While more and more countries in their energy policies and programmes for consumers focus on changing energy use of consumers, little is known about the actual effects of these behaviour policies, strategies, programmes or projects in reality. This is due to a lack of good, comparative evaluations and building upon existing knowledge. Most behavioural change strategies and/or programmes do not sufficiently include an evaluation of their effects or strategy. What is often measured is the distribution of leaflets, the number of hits on a specific website etc. Systematic evaluation of behavioural change programmes make it possible to assess the effectiveness of the activities and prove their worth. Estimates of budgets needed and activities that should be undertaken in new programmes to be developed can then be based on empirical evidence.

• New approaches are developed in isolation

The current level of knowledge does not sufficiently take into account the use of new instruments, such as ICT, or recent innovative approaches towards very specific target groups such as schoolchildren, youngsters, and senior citizens. These instruments are being developed and applied in more and more Member States and, thereby raising a common need to exchange experiences on the impact of these instruments and approaches. This need can only be satisfied through a European-wide effort.

These barriers lead us to the following research questions:

- 1. How to ensure that existing knowledge on behavioural change programmes is used in developing new behavioural change programmes, aimed at consumers?
- 2. How to measure the actual effect of behavioural change programmes?
- 3. How can the effects of behavioural change programmes be made more visible and tangible?
- 4. How can we effectively share knowledge on new approaches and new instruments?

To overcome these barriers, answer the research questions, and to increase the effectiveness of behavioural change programmes, the BEHAVE project has established objectives defined in the next section.

BEHAVE – The project

BEHAVE - PROJECT OBJECTIVES

The BEHAVE-project objectives are the following:

- 1. To develop a framework for the systematic meta-evaluation of behavioural change programmes;
- 2. To meta-evaluate existing policies and programmes and analyse and learn lessons from the results (impacts) of policies and programmes in EU member states targeting consumer behaviour;
- 3. To provide the European energy community of policy makers and practitioners with guidelines and best practices for developing behavioural change programmes that also incorporate experiences with new methods of communication (ICT, multimedia, design) and approaches for new and specific targets groups;
- 4. To contribute to a European level 'body of knowledge' on behavioural change programmes, in order to achieve better designed consumer-oriented programmes with more (cost) effective results.

For this project, a consortium of energy agencies from Austria, Bulgaria, Finland, France, Greece, Norway, Spain, Sweden, United Kingdom and the Netherlands was formed.

BEHAVE PROJECT STRATEGY

To meet these objectives, the BEHAVE consortium will compare a variety of existing consumer-oriented behavioural change programmes. We will mainly use existing evaluations of recent programmes aimed at consumers. This meta-evaluation will be developed within the project. The results of this metaevaluation will be used to develop guidelines and best practices for developing consumer-oriented behavioural change programmes. The project mainly focuses on communicative programmes, not on legislative or economic programmes or structural provisions. These programmes will only be included (to a limited extent) if they are combined with an extensive communication strategy. The reasons to focus on communicative programmes are that they:

- are relatively easy developed and implemented,
- focus on the changeable determinants of behaviour,
- are widely used within Europe at local, national and international level.

BEHAVE will analyse evaluations of behavioural change programmes that focussed on energy consumption in households, either building-related or appliance-related. The focus is on projects and programmes that were undertaken roughly in the period 2000 to 2006. This way, we incorporate the most recent projects and programmes, and at the same time, limit ourselves. Some recent examples of behavioural change activities aimed at consumers in the Member States are:

- Mass media campaigns to increase awareness on reduction of energy use and renewables (Spain, France, Germany)
- · Reduction of future energy demand through educational programmes (Greece, Croatia, Finland)
- Reduction of energy use through a community network approach (France, UK)
- Reduction of energy demand through the use of by using new instruments, such as multimedia instruments (Sweden, Netherlands, Norway)

Also, we will limit our evaluations to cover projects and programmes that have been undertaken within the global framework of climate change, reduction of energy use and security of supply.

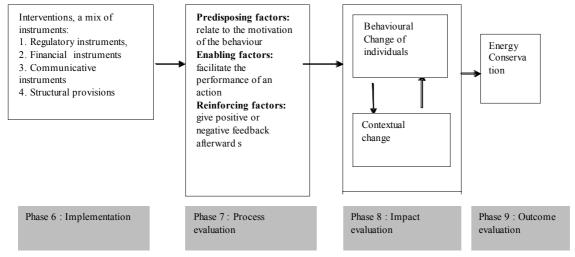
THEORETICAL BACKGROUND

The project started in December 2006 with a kick-off meeting. The project team has agreed upon the following working definition of behavioural change programmes/projects.

Behavioural programmes/projects are programmes/projects which aim to have an effect on energy related behaviour of con-

Below, a model for changing behaviour through influencing motivational, facilitating or reinforcing factors of energy related behaviour is presented. The approach for the project is based on the PRECEDE-PROCEED model (Green and Kreuter, 1999). The model was designed for changing the behaviour of individuals. Figure 1 gives an overview of the model.

"The PRECEDE model is a framework for the process of systematic development and evaluation of health education programmes.



Source: Green & Kreuter (1999)

Figure 1 PROCEED model for evaluating an intervention strategy

PROCEED was added to the model in the late 1980s. PROCEED was added to the framework in recognition of the emergence of and need for interventions that go beyond traditional educational approaches. The purpose of PRECEDE/PROCEED model is to direct attention to outcomes rather than inputs. This forces planners to begin the planning from the outcome point of view." (cit. L.W. Green, websiteUSF hsc.usf.edu/~kmbrown/PRE-CEDE_PROCEED_Overview.htm).

In the BEHAVE-project we will only use the PROCEED part of the model. PROCEED is an acronym for Policy, Regulatory, Organizational Constructs in Educational and Environmental Development. This model will be used as a framework for the meta-evaluation of behavioural change programmes within the project.

The complete PRECEDE-PROCEED model consists of 9 steps, from planning an intervention to evaluation of the intervention. PROCEED therefore begins phase 6. The 4 phases of **PROCEED** are the following:

Phase 6 - Implementation

Phase 7 - Process Evaluation

Phase 8 - Impact Evaluation

Phase 9 - Outcome Evaluation

Phase 6 - IMPLEMENTATION OF THE PROGRAMME

The implementation of the programme is the execution of the programme.

Phase 7 - PROCESS EVALUATION is used to evaluate the process by which the programme is being implemented. The progress of the programme is monitored, while the programme is under way. This monitoring can be both qualitative and quantitative.

Phase 8 - IMPACT EVALUATION measures the programme effectiveness in terms of intermediate objectives and changes in predisposing, enabling, and reinforcing factors.

During the impact evaluation, the immediate effect of the programme is measured. Does it have an effect on the behaviour of the target group, and their predisposing, enabling, and reinforcing determinants, or did it have an effect on the societal circumstances.

Phase 9 - OUTCOME EVALUATION measures change in terms of overall objectives and changes in health and social benefits or the quality of life

This is the evaluation on the effect on society. Does the programme lead to a change in the use of energy? The ability to detect changes in impact or outcome evaluations depends heavily on the standards that have been set, the size of the effect, the precision and quality of the evaluation, and the preciseness of the objective.

The BEHAVE project will mainly deal with behavioural change programmes that are already finished. Therefore, we will redefine Phase 7, Process Evaluation. This will focus on questions such as Has the behavioural change programme run according to plan? Are all changes in programme setup accounted for? This is mainly an evaluation of the organisation that ran the programme.

DATA GATHERING AND METHOD OF ACTION

An initial categorisation of behavioural change programmes has been developed. This categorization is partly based on the Dutch work at SenterNovem on developing intervention strategies for influencing energy-related behaviour. We have categorised behavioural change programmes/projects according to the following topics:

- 1. Target group
- 2. Type of organisation that is responsible for the action
- 3. Instrument(s) used
- 4. Type of behavioural factors that the action addresses (predisposing, facilitating, reinforcing)
- 5. Type of evaluation (process, impact, outcome)

Based on this categorization, a template for data gathering was developed. This template can be found in Appendix I. Based on this template, all project participants gathered information on behavioural change programmes in their respective countries. Each partner submitted the requested information in English,

and when asked, will gather more information about the programme. A team of participants from three countries assessed the information gathered from approximately 100 behavioural change programmes. This assessment will lead to a selection of 40 behavioural change programmes that will be studied more in detail. Selection criteria will be developed and discussed between all project partners. The following criteria will probably be part of the selection criteria:

- 1. Availability of data about the programme, preferably both quantitative and qualitative
- 2. Comparability of the programme with other programmes
- 3. Data on evaluation of the programme

Furthermore, a good spread over the countries participating in the project, the different target groups and the instruments used will be part of the selection criteria.

NEXT STEPS AND CHALLENGES

For the 40 cases selected, we will execute a meta-evaluation, assessing the results of the individual programme evaluations. If no or not enough evaluation data can be found, the project team will attempt to gather evaluation data by themselves. This will be done by interviewing the officials that were responsible for the management of the specific programme, and by literature search. We do not have the capacity to undertake surveys of participants.

The results of the project will be mainly qualitative. We expect to find few evaluations in which the behaviour before and after the intervention is measured in the same way. These will mainly be research projects undertaken by universities, which we will also include in the BEHAVE project. We expect quantitative formal evaluations to be scarce, because undertaking a formal evaluation on the effects of communicative programmes is a difficult and costly task. This is particularly the case for programmes which aim to change attitude and values and which may, therefore, not lead to behavioural changes in the short term. Also, it is difficult to separate the effects of communication programmes from those of other policy instruments.

Although we cannot undertake formal evaluations of the efficacy of interventions, we can gather information from the managers of the behavioural change programmes. In a strict sense, this means that we will gather perceptions of the efficacy of the intervention and not data on the efficacy of the intervention itself. Because of the expected lack of formal evaluation results, we have developed a ranking of the selected cases, according to the evidence base. The form this evidence takes depends on context: results of a formal evaluation, or perceptions of the results. Therefore, we will categorize the results of the evaluations according to three types:

- 1. Evaluations with scientific evidence on efficacy and effectiveness—the experiment-type setting,
- 2. Evaluations with evidence on context—if it works in a specific context and if so, how
- 3. Evaluations with colloquial evidence—practical results.

By doing this we can weigh each programme evaluation, and use the weights in developing guidelines. Type 1 evaluations will be attributed a higher weight than type 3 evaluations. Usually, type 1 evaluations are carried out by universities and will, therefore, be very scarce in our project. We expect to find mainly type 2 and type 3 evaluations.

Based on the meta-evaluation results, best practices will be defined, and guidelines for developing and implementing behavioural change programmes will be developed. This will be a practical instruction manual, templates and tools for how to organise and implement effective energy-related consumer behaviour change programmes and projects.

The usefulness of these guidelines will be determined / tested. This is a test of usefulness of the developed guidelines for policy makers, professionals and the scientific community. The guidelines will be corrected and adapted in response to the feedback received from the target groups (policy makers, professionals, etc.) to improve their practical relevance. The testing activity will be done through meetings and round table sessions with selected key agents from the target groups and through the impressions and recommendations obtained during the guidelines training sessions. The guidelines will also be tested by the Scientific Advisory Committee of BEHAVE. The Scientific Advisory Committee consists of three to four independent (outside the project) behaviour and communication professional experts from different EU-countries. The guidelines will be presented during training sessions, one for every participating country, while the consortium aims at a training session in non-participating countries as well.

Conclusions and expected results

Influencing individual consumers to invest in energy-efficient appliances and change their daily behaviour is crucial to reduce energy consumption. Although, behavioural change brought about by communicative programmes is very difficult to measure, the BEHAVE project is a first step in that direction. The BEHAVE project does not attempt to measure behavioural change directly, but "learns" from available information on existing programmes. The meta-evaluation will rationally analyse available information on behavioural change activities and share this knowledge with the Member States. We can then build upon that knowledge to design more effective behavioural change programmes. Guidelines to design effective communicative programmes will be developed. These will incorporate "best practices". And, as more knowledge accumulates, the "best practices" will improve.

The project will have two main results:

- 1. We will transfer knowledge on best practices and guidelines for developing behavioural change programmes. This will be done mainly by giving training about the guidelines to policy makers and other professionals that develop and implement behavioural change programmes aimed at consumers. We will also have a website, publish articles in journals, organise a final conference and give presentations about the topic.
- 2. We will develop a database with the 100 cases we collected (and the 40 that we investigated in detail). In this database, people can search for best practices or examples relevant to their own situation. The database will be accessible through

our website, and we will call upon people from outside the consortium to add cases.

The results will provide policy makers and others with information and tools to develop and implement more efficient behavioural change programmes.

NOTE:

During the upcoming Summer Study, the first results of the project will be presented.

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Appendix I Project inventory template

Please fill in one form per programme/project.

Please name the file: Template BEHAVE - name of programme

Please fill in all the questions. This template is meant to gather 100 cases of behavioural change programmes. Based on the information in the templates, we will make a selection of 40 cases. Please note! If the programme will be chosen among the 40 cases, material concerning the programme has to be delivered in English.

At the left side of the table, you will see the item that we ask you to fill in on the right side of the table. Please tick box(es) where appropriate.

For the sake of simplicity, we have used the term 'programmes' throughout the template. With this, we also mean projects (= action that is part of a bigger entity).

For clarification during filling the template, please contact ... (fill in your name, telephone no. and email address).

| Name of programme | |
|---|--|
| 2. Country | |
| Contact person Name and email address of person that can provide more information | |
| Goal Please state the goal of the programme in 1 sentence. | |
| 5. Target Group(s) (please tick box) | □ consumers / citizens (= individual) □ households (= the group of people forming a household) □ youngsters □ elderly □ schoolchildren □ low income groups □ other (please specify) |
| 6. Size of target group What is the size of the target group. Please give a number. | - Other (pictage specify) |
| 7. Topic (please tick box) | □ environment in general □ renewable energy □ energy efficiency in general □ energy efficient appliances □ lighting □ heating/cooling □ other (please specify) |
| Description Please give a description of the action in max. 5 sentences. | |
| 9. Start date (dd-mm-yy) | |
| 10. End date (dd-mm-yy) | |
| 11. Budget (total, in €) 12. Organisation | □ national government |
| What type of organisation was responsible for implementation of the programme? (please tick box) | □ national, regional, local energy agency □ regional government □ local government □ utilities □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO |
| | □ other (please specify) |
| 13. Financier of the programme What type of organisation financed the programme? | □ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify) |
| 14. Aimed at: Which type of behaviour does the programme want to influence? | □ investment behaviour (buying of energy saving bulbs, isolation of house, etc) □ habitual behaviour (turning of the heat, closing doors) □ energy behaviour in general |
| 15. Aimed at: Which type of behavioural factors does the programme want to influence? (please tick box) | □ motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities) |
| 16. Instruments Which instruments have been used in the communicative programme? (please tick box, more are possible) | Communicative instruments: Mass media instruments: TV ournalistic material infotainment advertising material infotainment advertising material infotainment advertising material infotainment advertising material Newspapers / Magazines journalistic material infotainment advertising material infotainment advertising material infotainment advertising material infotainment doubt infotainment infotainment infotainment infotainment infotainment infotainment infotainment information informati |
| | □ tax differentiation □ emission trading □ financing constructions (meant to ease investments by innovative financing, like energy services schemes) □ others (specify): |

| 17. Evaluation? | □ yes |
|--|--------------------------|
| Is/will there be an evaluation available (at | □ no |
| the latest in 2007)? | □ don't know |
| 18. Which type of evaluation has been/will | Monitoring |
| be executed? | □ qualitatīve |
| (please tick box, more are possible) | untitative |
| | Process evaluation |
| | □ qualitative |
| | □ quantitative |
| | Effect evaluation |
| | □ qualitative |
| | □ quantitative |
| | □ other (please specify) |
| 19. Is detailed information about the | □ yes |
| programme and evaluation available? | □ no |
| (please tick box and clarify) | detailed information on: |
| | |
| | |
| 20. Goal achieved? | □ yes |
| Was/were the goal(s) of the programme | no no |
| achieved? | □ partly |
| 21. Other comments or additional | |
| information about the programme | |