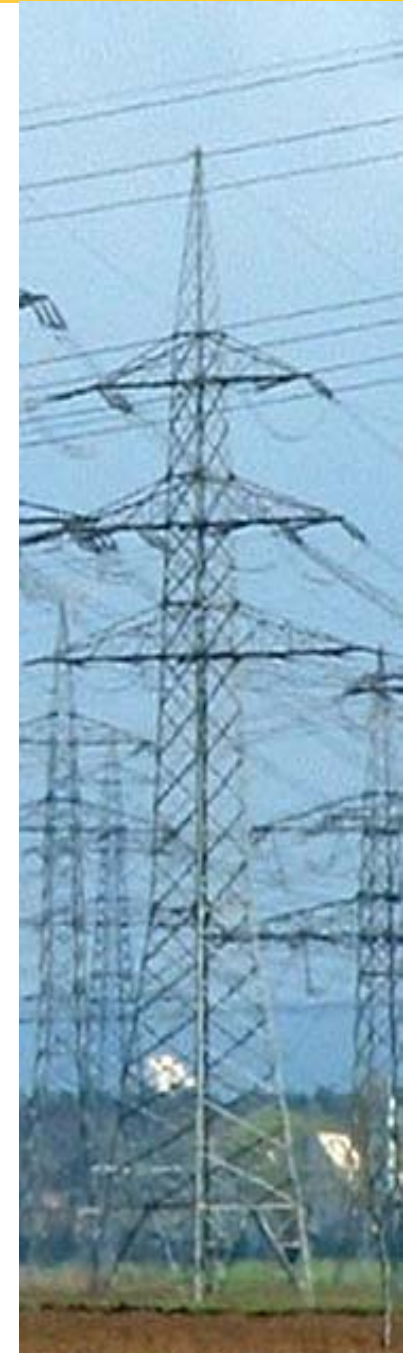


EEDAL'06INTERNATIONAL ENERGY EFFICIENCY IN
DOMESTIC APPLIANCES & LIGHTING CONFERENCE '06

The Art of Consultancy – Comparison of different types of electricity saving programs for private households

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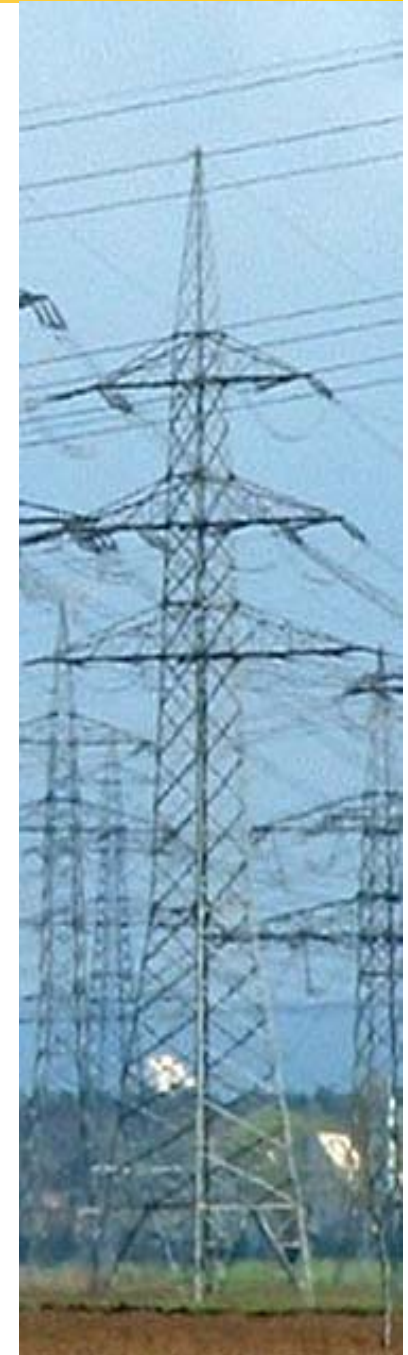


EEDAL'06

INTERNATIONAL ENERGY EFFICIENCY IN
DOMESTIC APPLIANCES & LIGHTING CONFERENCE '06

**Results of an ongoing reasearch project
funded by
the state of Baden-Wuerttemberg
(BW-Plus)**

**in cooperation with
University of Halle, Institute of Psychology
and
Institute for Social-Ecological Research
(ISOE, Frankfurt/M.)**

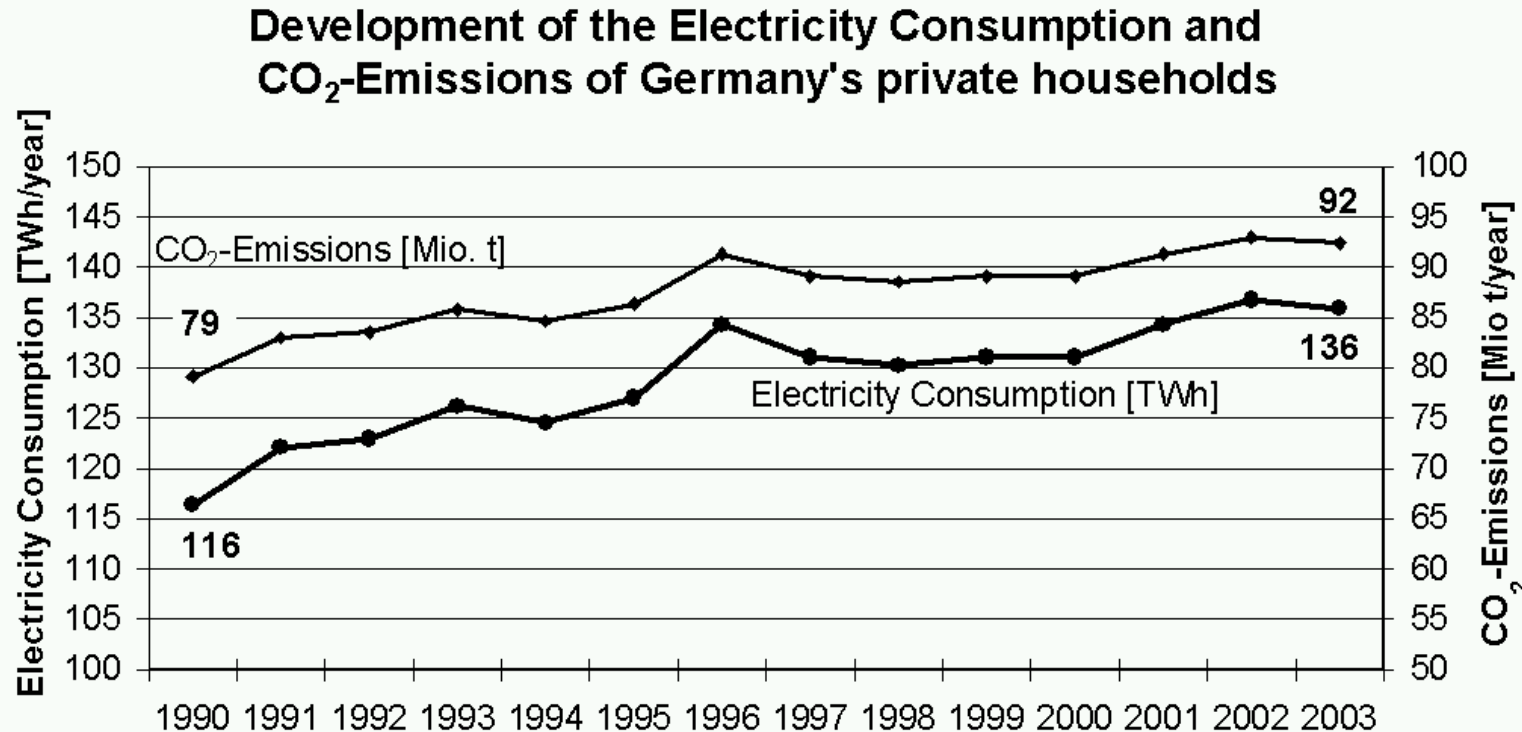


Structure



- ❖ **Introduktion: Rising consumption, emissions and costs**
- ❖ **Analysis of electricity saving programs**
- ❖ **Examples of good practice**
- ❖ **Evaluation problems and standards**
- ❖ **Summary / Outlook**

Electricity consumption



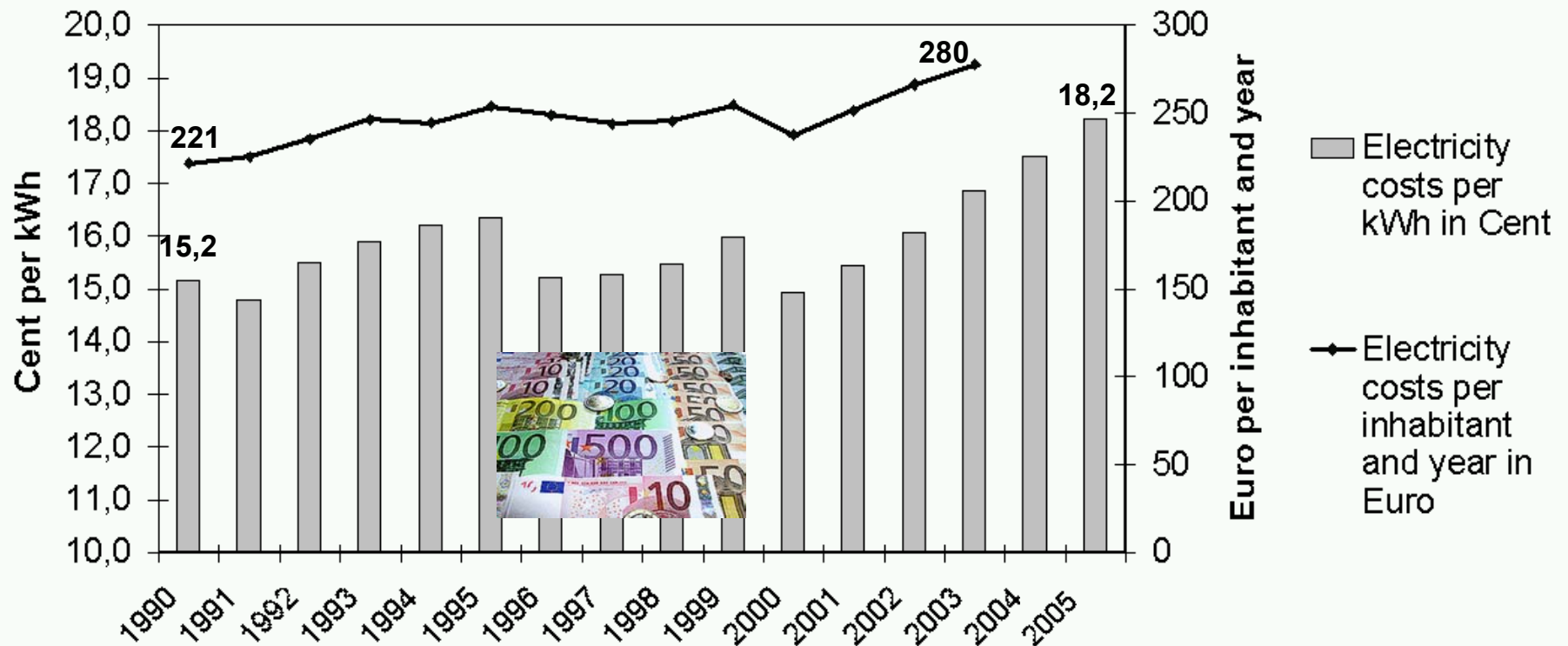
Rise between 1990 and 2003: 17%
Population Growth: 3,5%

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- a quarter of the electricity consumption in Germany is due to private households
- rising electricity consumption of privat households + rising CO₂-emissions

Prices and Costs

Development of the electricity costs for private households in Germany per kWh and per inhabitant and year

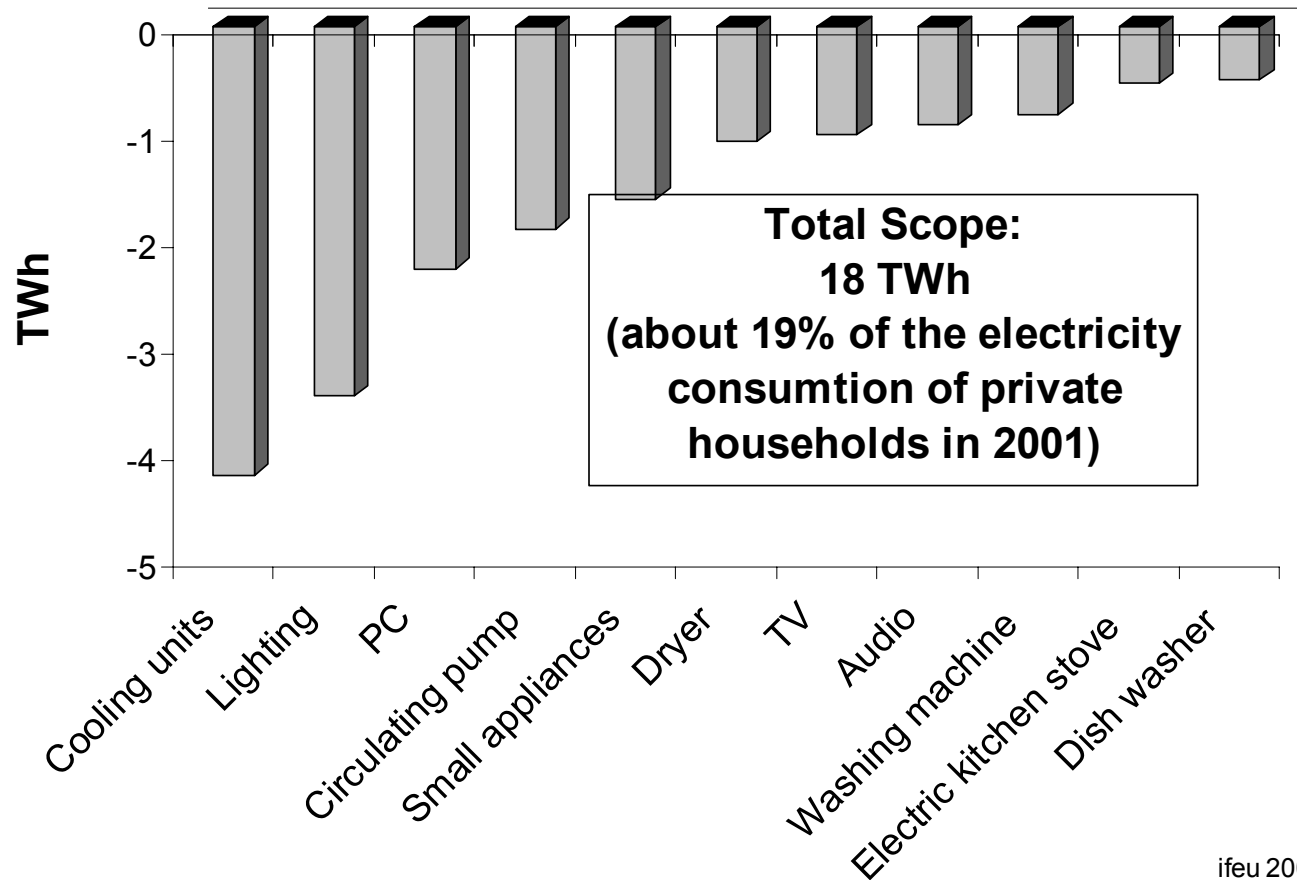


Rise of electricity costs per inhabitant: 1990 - 2003: +26%
Rise of electricity costs per kWh: 1990 - 2005: +20%

ifeu 2005

Potential for cost-effective reduction

Potential reduction of electricity consumption - Private households in Germany till 2010 by using energy efficient appliances



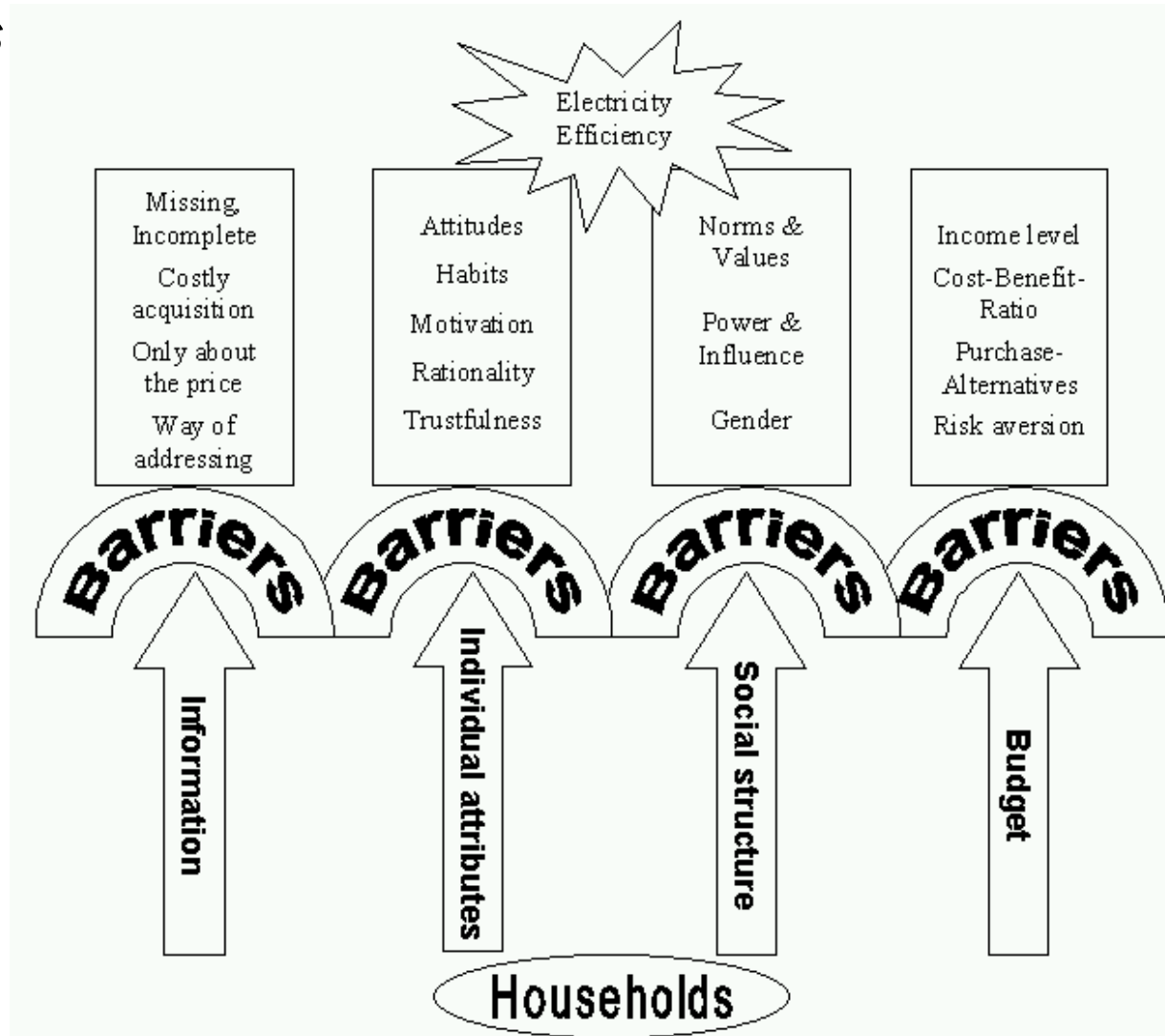
Consequence

- **Increasing needs of energy efficiency information**
- **Consultancy is one possible strategy to provide information**

and

- **The new EU-directive for energy enduse efficiency and energy services can push more and better information**
- **That's why this project focuses on effective and efficient consultancy programs**

Barriers

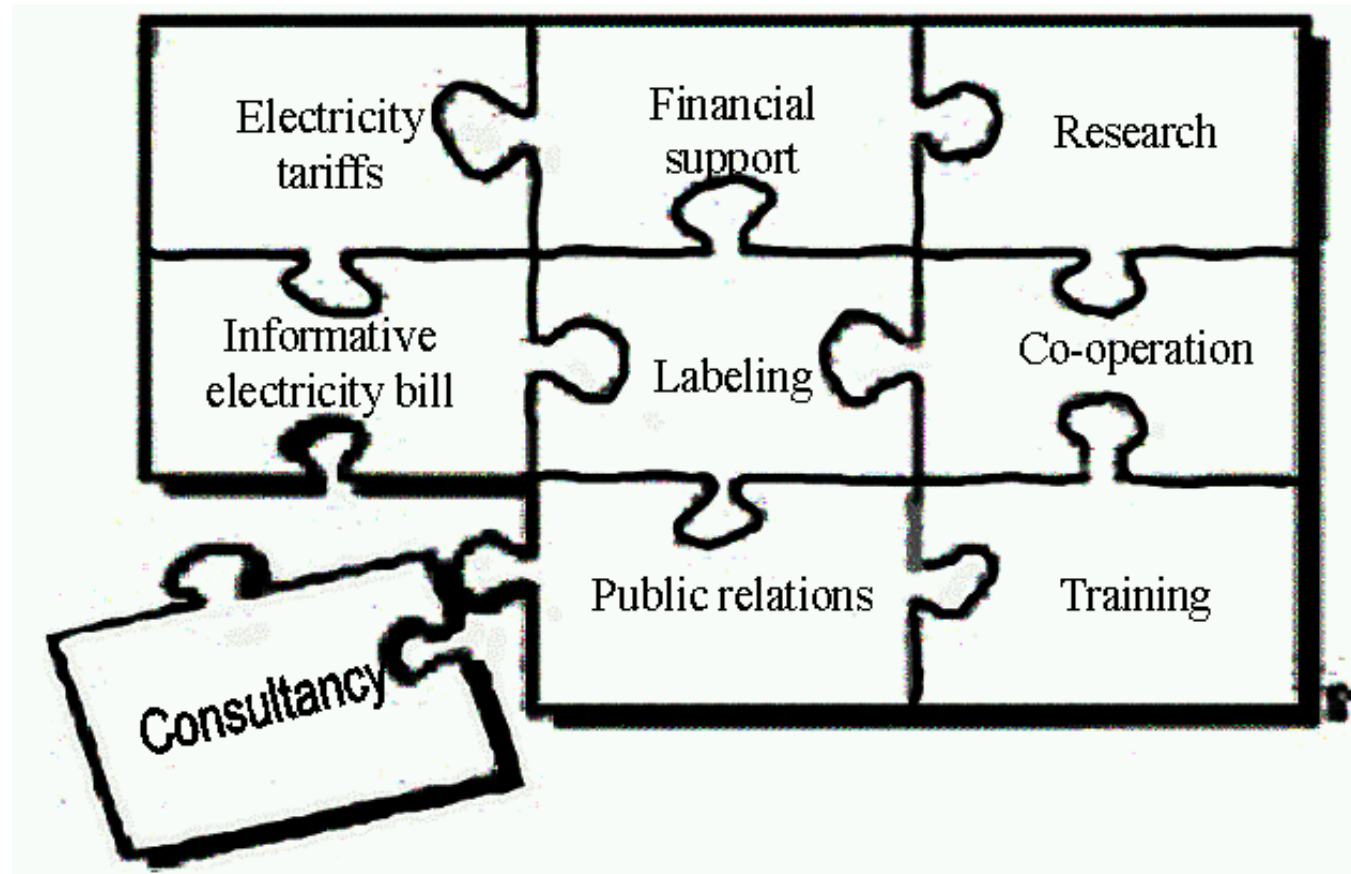


The structure of barriers show:

- there is no simple way for their overcoming
- a combination of different measures is more useful than single measures

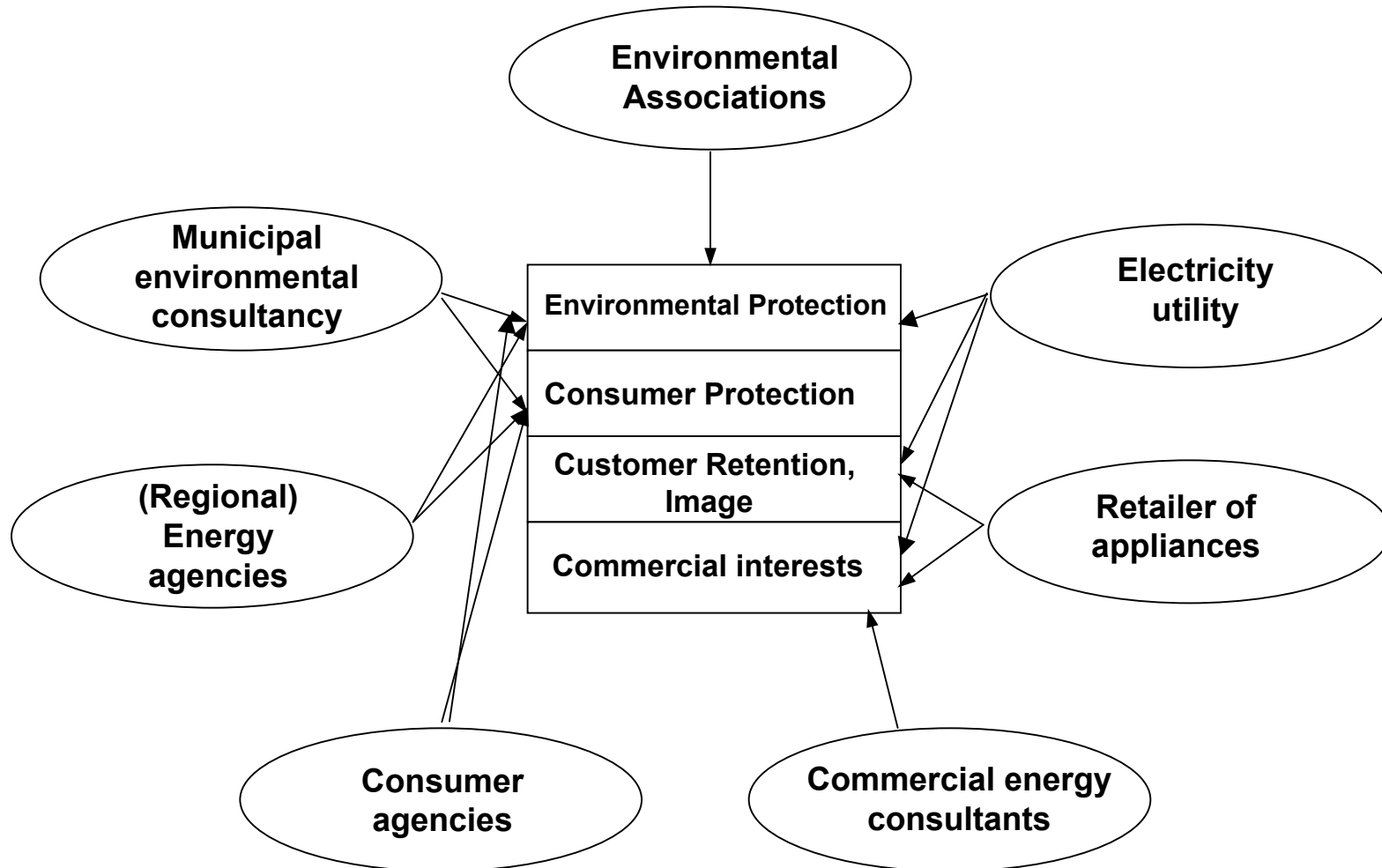
Policy measures

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→ „Soft measures“ work!

Provider of consultancy and their motivation



Overview and Classification I

Consultancy				Feedback	Campaigns	Financial Support
On Site	Stationary	by "lay-consultants" on site	Internet			
<ul style="list-style-type: none"> • Topics are adapted to the personal needs and demands of the consumer and dealing with both, general and special problems 				<ul style="list-style-type: none"> • gives individual and understandable information on electricity consumption of a household • benchmark of electricity consumption is possible 	<ul style="list-style-type: none"> • inform people about energy saving issues in general • can address to all people of a region, but should be tailored to special target groups 	<ul style="list-style-type: none"> • People get subsidies or energy saving appliances for free • Suitable for appliances which are still too expensive or meanly known
<ul style="list-style-type: none"> • Direct and personal contact in the households • Energy saving measures can be directly applied and shown at home 	<ul style="list-style-type: none"> • Interested people come to a consultancy in an office or show room • General information is given (leaflets) but also special problems can be discussed 	<ul style="list-style-type: none"> • Comparable to "on site"; but Consultants come out of the same "social class" or social network; lower professional standard 	<ul style="list-style-type: none"> • individual information given in a standardized way • but: special questions can't be answered • Worldwide access to the information, everytime 			

Which program fits ?

		On-site consultancy	Stationary consultancy	Internet-consultancy	Feedback / Informative energy bill	Campaign	Financial support
Main objective	motivating / calling attention			++	+++	+++	+++
	informatory / explaining	+++	+++	+++	++	++	+
Provider	profit provider	++	++	+++	+++	++	+++
	non-profit provider	+++	+++	+++	+	+++	+
Area	wide area	+	++	+++	++	+++	+
	small area	+++	++	++	++	++	+++
Number of Topics	a lot of topics	+++	+++	++	++	+	+
	single or few topics (e.g. focused on stand-by)			++	++	++	+++
Target group	exclusive target group(s)	+++	++	+++	+	+	+
	generally suitable for all target groups	depending on design of the program					

+++ = very well suitable

++ = suitable

+ = restrictedly suitable

Energy Consultancy Works! 3 Examples

Stationary Energy Consultancy by the Municipal Utility Company in the City of Frankfurt (Oder)

Results of the evaluation (Bremer Energie Institut):

- **Factors for success:**
the consultancy was combined with
 - broadly based public relation and
 - a financial support program for efficient appliances which was made known with credit notes
- **Cost-benefit-ratio:** about 0,3 € per saved kWh (electricity)
- **Proceeding:**
 - 1 survey by questionnaire
 - identifying measures and behavior changes

Energy Consultancy Works! 3 Examples

Stationary Energy Consultancy by the German consumer agency (Verbraucherzentrale)

Results of the evaluation (ifeu-Institut 2005):

- **Factors for success** :
 - independency of the provider
 - consultancy was free of charge
 - engagement of the consultants
 - synergy effects with other consultancy offers (e.g. for building owners) of the consumer agency
- **Cost-benefit-ratio** about 0,002 - 0,003 € per saved kWh (electricity + heating)
- **Proceeding**:
 - 1 survey by telephone
 - identifying measures, behavior changes, influence of the consultancy

Energy Consultancy Works! 3 Examples

Mass Media Campaign “Off. Really off?” aiming at the reduction of stand-by-losses

Results of the evaluation (Wortmann + TNS-Emnid 2001) :

- **Factors for success:**
 - a “fit an proper” advertisement agency
 - entertaining and fun message
 - integrated approach co-ordinating the activities and involved organisations
 - reminder campaign
- **Cost-benefit-ratio:** about 0,03 € per saved kWh
(electricity / only stand-by)
- **Proceeding:**
 - three surveys: pre-test, ex-post-test, and follow-up-test
 - identifying knowledge and behaviour changes

Problem: Comperability

- Evaluations with different methodology
- Consistent evaluation standards in Germany are missing

→ Definition of minimum standard for the evaluation of energy consultancy programs is necessary

Minimum Standards for Evaluations



- **Transparency and documentation** of methodology and calculation schemes

Costs of the program

- Documentation of the **most important costs**, (labour costs / working hours, material costs ...)
- For comparison: Is it a pilot scheme or carried out the first time or does it run for a long time **with routine**? (20-30 % less expensive)?
- If you compare programs, which have been carried out in different years, take into account an **inflation-index**.

Energy Savings

- Estimate the savings by
 - **calculations** or
 - **measurement** of the consumption of a larger group compared with control group.
- Ask the person being advised, how strong the **influence of the consultancy** has been.
- Calculate the energy savings based on
 - substitution of appliances
 - and **behavior changes** as well.

Influence of the consultancy

What kind of influence the consultancy did have concerning the choice of the energy efficiency class of your new fridge?

The consultancy was ...

	Default answers	Multiplier for calculating the saving effect
<input type="checkbox"/>	the crucial point	1
<input type="checkbox"/>	an important assistance	0,75
<input type="checkbox"/>	a supplementary assistance	0,5
<input type="checkbox"/>	without influence	0
<input type="checkbox"/>	I don't know	0

Summary

- **Consultancy works to reduce electricity consumption**
- **Factors of success:**
 - **adaquate combination with public relations, campaigns or other policy measures or programs**
 - **choice of type of consultancy program depends on objectivs, topics, provider and target group**
 - **credibility of the provider**
- **Evaluated cost effectiveness varies**
- **Evaluation standards are still to be developed for the quantification of saved energy**

Outlook

Second Part of the Research Project:

Pilot case study:

- On-site consultancy on electricity in combination with informative energy bills in the city of Heidelberg
- Monitoring and evaluation with „new“ standard
- Results: summer 2007



Thank you for your attention!

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Overview and Classification III

Approach	Campaigns				Financial support	
Type	Massmedia Campaigns	Campaign incl. model-households	Campaigns with diffusion elements	Electricity saving competitions	Financial support for energy efficient appliances	Free give-away of energy-saving lamps
Case	"Off. Really off?"	"25% less electricity with investment of 1000 DM"	"Negawatt instead of Megawatt"	competition for least electricity consumption	support program "Do not hide" in Jena	promotion of energy-saving lamps "Bright NRW"
Main focus	stand-by	electricity	energy-saving lamps	electricity	electricity	energy-saving lamps
Provider / Initiator	Energiestiftung Schleswig-Holstein (energy agency)	HessenEnergie (energy agency)	University of Kiel	Bund der Energieverbraucher (consumer federation)	Stadtwerke Jena (municipal utility company)	Verbraucherzentrale NRW (consumer organisation) + Wuppertal Institute
Term	2000 / 2001	1994	1990 / 1991	December 2003	1999 - 2005	1996
Area of operation	State of Schleswig-Holstein	State of Hesse	State of Schleswig-Holstein, mainly Kiel	Germany-wide	trading area of municipal utility company Jena	State of North Rhine Westfalia (NRW)
Results to cost-benefit-effects of each case	available	own calculations	own calculations	not evaluated	available	available
Comments		only limited state-ments to individual cases possible, there are no results to broad effects			without considering of windfall profits	

Overview and Classification II

Approach	Consultancy				Feedback Programs	
Type	On-site consultancy	Stationary Consultancy	Consultancy by "lay-consultants"	Internet Consultancy	Informative energy bill	Feedback + Goal-Setting
Case	on-site electricity saving consultancy in Hannover	consultancy by municipal utility company in	ÖkoKick - a lot of environment for less money	electricity-check for households	energy billing in Norway	feedback + goal-Setting in the Netherlands
Main focus	electricity	electricity	environmental protection (incl. electricity)	electricity	electricity (incl. for heating)	natural gas (possible also for electricity)
Provider / Initiator	Klimaschutzagentur Hannover (regional energy agency)	Stadtwerke Frankfurt / Oder (municipal utility company)	Arbeiterwohlfahrt (AWO) Osnabrück (charity)	Energieagentur NRW (energy agency)	Norwegian utility companies + University of Oslo	University of Rotterdam
Term	2002 / 2003	permanent	1998 - 2003	since Mai 2005 permanent	first model project 1989	1983 - 1986
Area of operation	2 districts in the city of Hannover	trading area of municipal utility company Frankfurt / Oder	City of Osnabrück	publicity mainly in the state of NRW	meanwhile compulsive throughout Norway	325 households in the Netherlands
Results to cost-benefit-effects of each case	own calculations	available	not evaluated	not evaluated	available	not evaluated
Comments	calculated savings only from newly installed electric appliances	calculations by using lent measuring instruments without considering of windfall profits	saving effects not significant because of small amount of data	first evaluations intended in 2006	conception costs not included, high share of electricity heating in Norway	