

# What does 'energy efficiency' mean for the households?

Grégoire Wallenborn  
Université Libre de Bruxelles



# Starting point



- Methods of the study:
  - quantitative and qualitative methods
  - big survey (>1000 people)
  - focus groups and face-to-face interviews
- Questions of research:
  - gaps between consumers' statements and behaviours
  - energy-consuming practices and the uses of energy-consuming objects
  - diversity and multifaceted nature of consumption profiles.

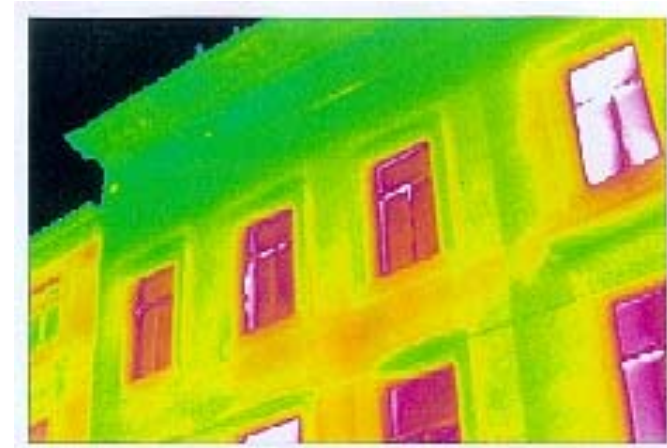


# Culture of energy: 4 dimensions

- Material culture: equipments, envelope
- Attitudes and representations
- Knowledge
- Practices and behaviour

# Material culture

- Electricity consumption
- Central heating and its regulation
- Insulation



# Attitudes and representations

- High awareness of environmental problems
- Comfort is the most important motivation
- Investment rather than behaviour
- Socio-demographic variables dominate
- No correlation between attitudes and practices
- Conclusion: the most conscious are also the most impacting



# Knowledge

- Problem for grasping energy as a physical parameter
- Bills not very well known
- Example:
  - Overestimate the insulation
  - Do not know grants
  - Are confident in non reliable sources of information
  - Believe they are well informed about energy conservation



# Practices



- Energy is present only through its various uses
- Dynamics differs with the household's sectors
- In one household, there is no one single energy-saving rationale
- Indoor temperature as a source of conflict
- Regulation of temperature: source of disagreement
- RUE: bad analysis grid for energy practices!



## Current culture

- Energy is invisible
- Energy is abundant
- Energy is cheap
- Users are passive and ignorant
- But they are expected to be rational

## New culture

- Fragile (black-outs)
- Complicate (liberalisation)
- Make it visible
- Make it precious
- Users are active and knowledgeable
- They are empowered

# Priorities of European energy policy

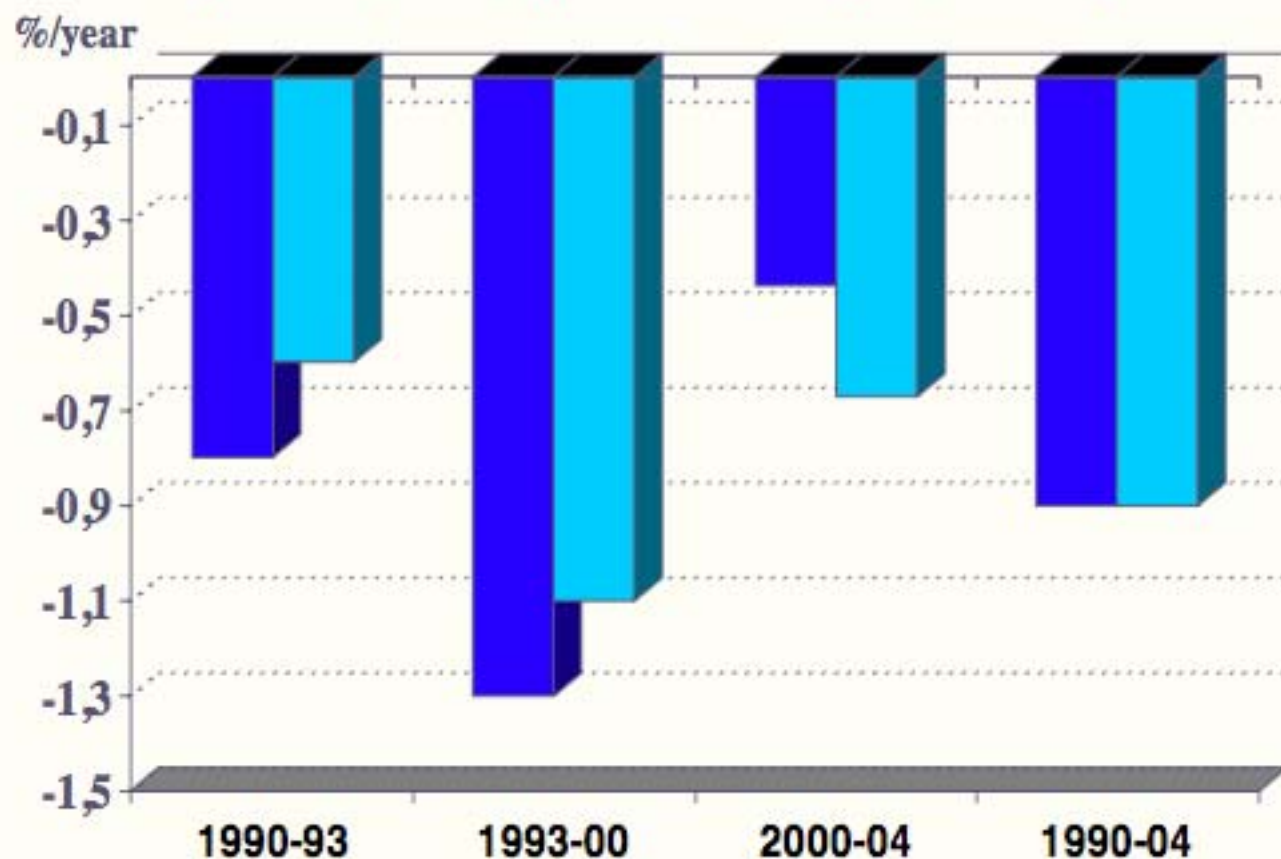
- 1) Energy efficiency
- 2) Alternative energy (renewable, CO<sub>2</sub> sequestration, nuclear)

But sufficiency will also be needed:

- 20% (30%) GHG emissions by 2020
- 60-80% by 2050

# EU-15 primary and final energy intensities

Regular decline since 1990 (-1.1%/year) (or -14% since 1990); growth in energy consumption 40% less than the economic activity → faster decrease in primary intensity until 2000, because of cogeneration, wind, gas combined cycles; reverse phenomena since 2000

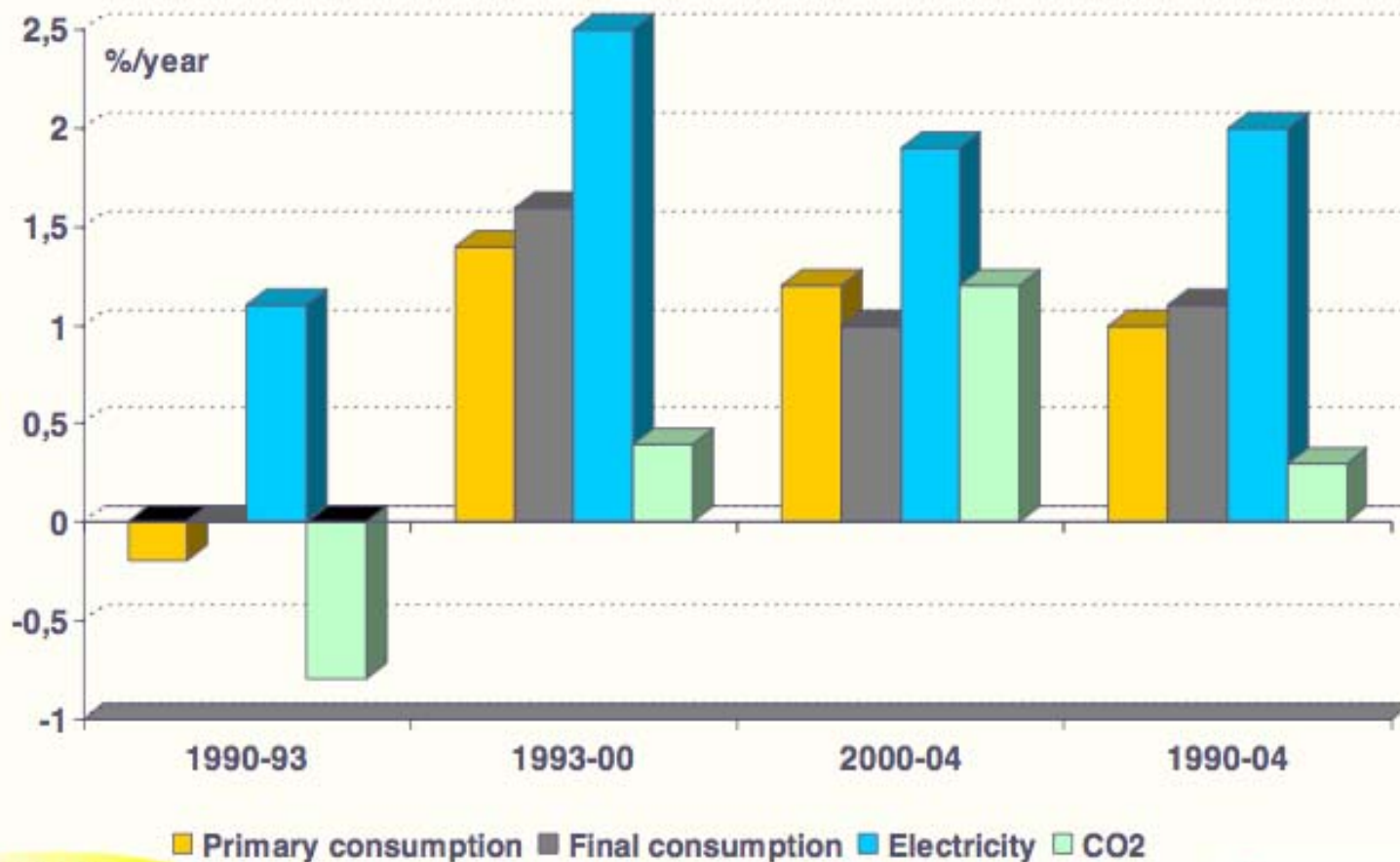


at normal climate

■ primary ■ final

# Energy consumption and CO2 trends

Increase in the EU15 consumption by 1% between 1990 and 2004; more rapid progression between 1993 and 2000. Regular and more rapid progression for electricity (2%/yr). CO2 emissions from energy combustion are in 2004 slightly above 1990 level (5%)



# Household energy efficiency

- Energy demand for heating is stable: efficiency gains offset by increased surfaces
- Electricity demand is increasing despite increased performance appliances

# Policy for a new culture of energy?

- Energy efficiency
- Alternative energy
- Sufficiency: structural constraints
- Articulation of these 3 legs

- Study about energy consumption by Belgian households:

[www.belspo.be/belspo/fedra/proj.asp?l=en&COD=CP/50](http://www.belspo.be/belspo/fedra/proj.asp?l=en&COD=CP/50)

- Centre for Studies on Sustainable Development:

<http://www.ulb.ac.be/igeat/cedd/>

Gregoire.wallborn@ulb.ac.be