

# Energy savings, beloved and ignored

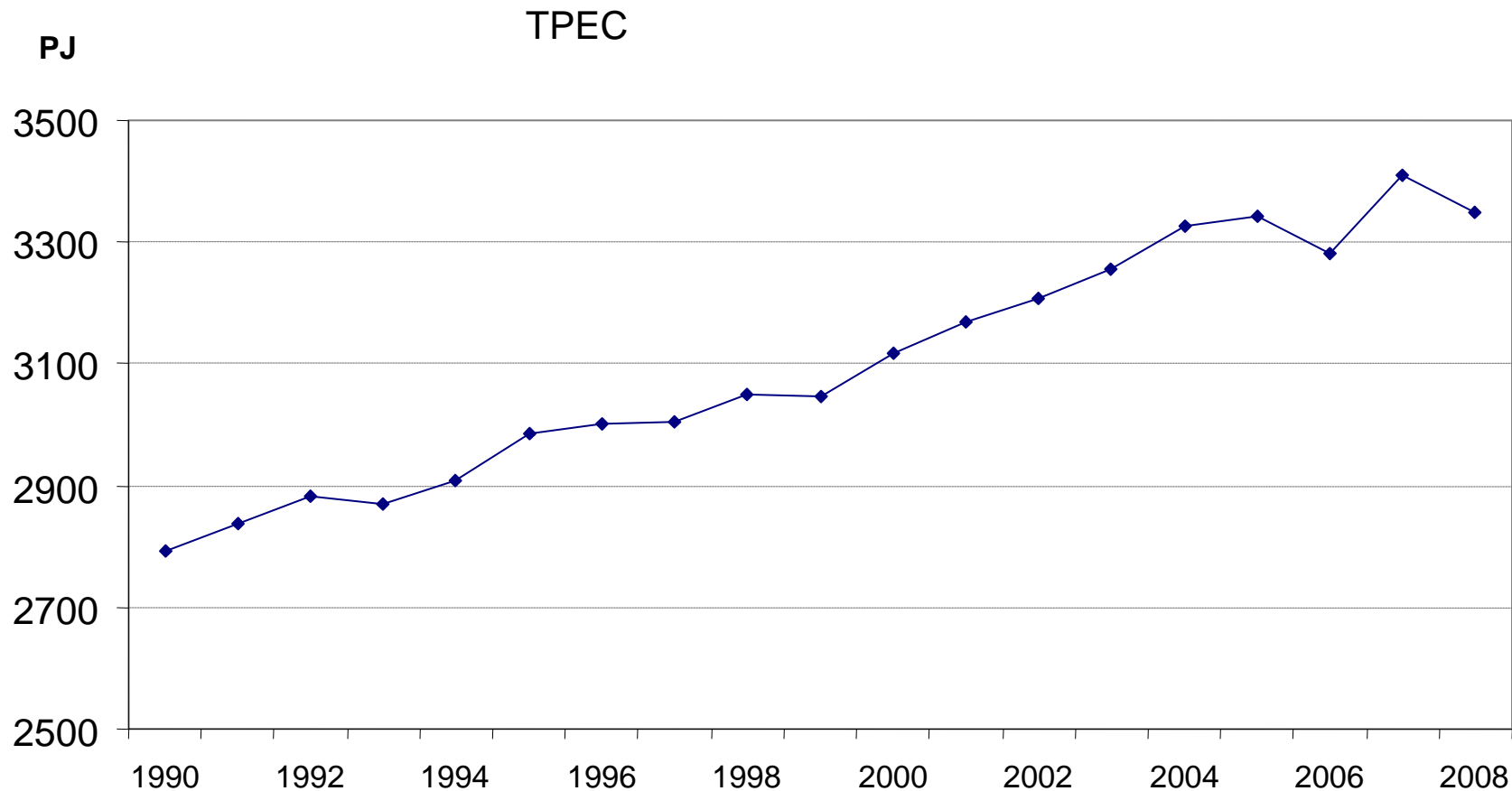
Colloquium Policy Studies,  
Piet Boonekamp, 4 November 2011



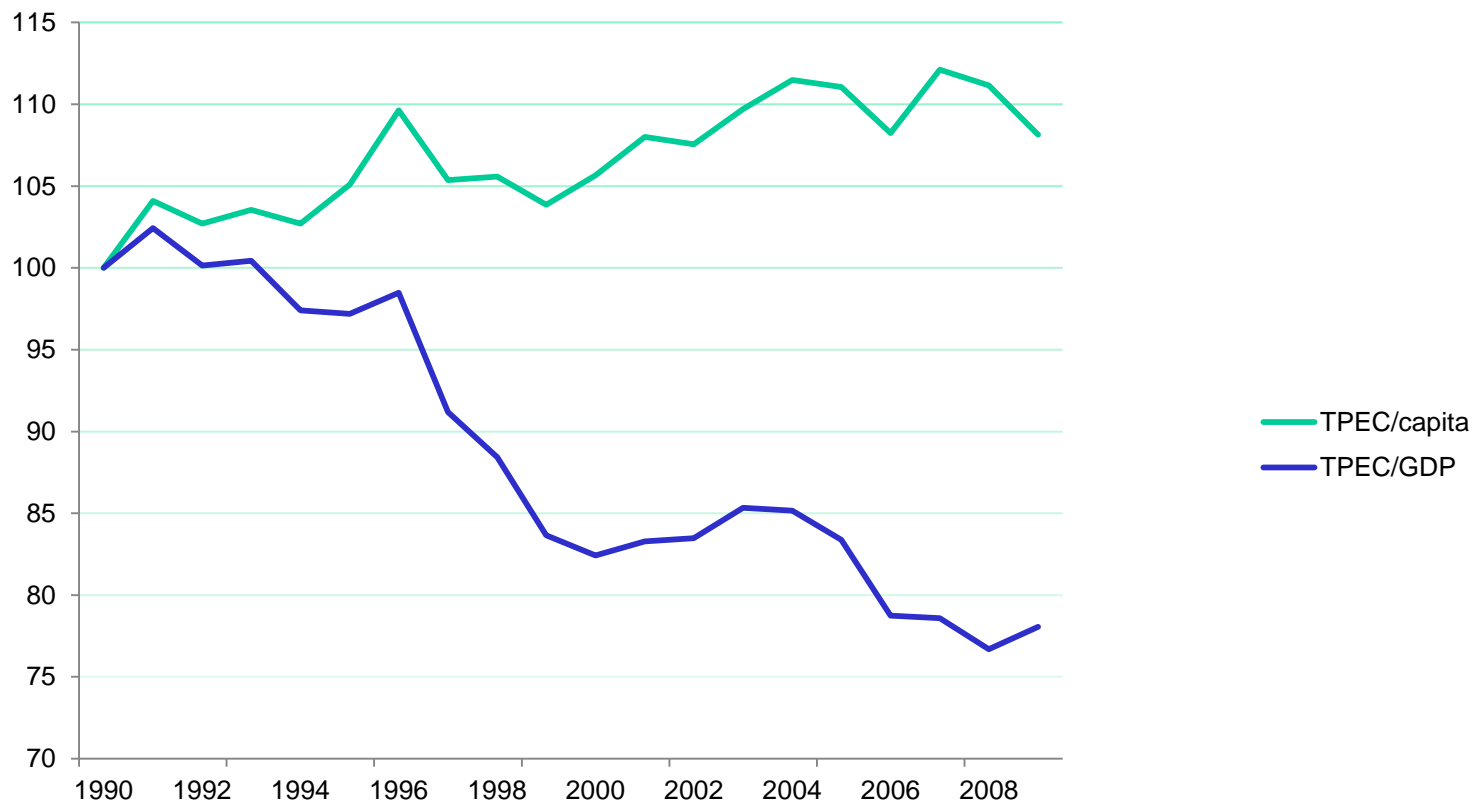
## What's up?

- Energy consumption trends
- What are savings
- Why save energy?
- Stimulating savings
- Realised savings
- What has (not) been accomplished
- Present and future energy trends

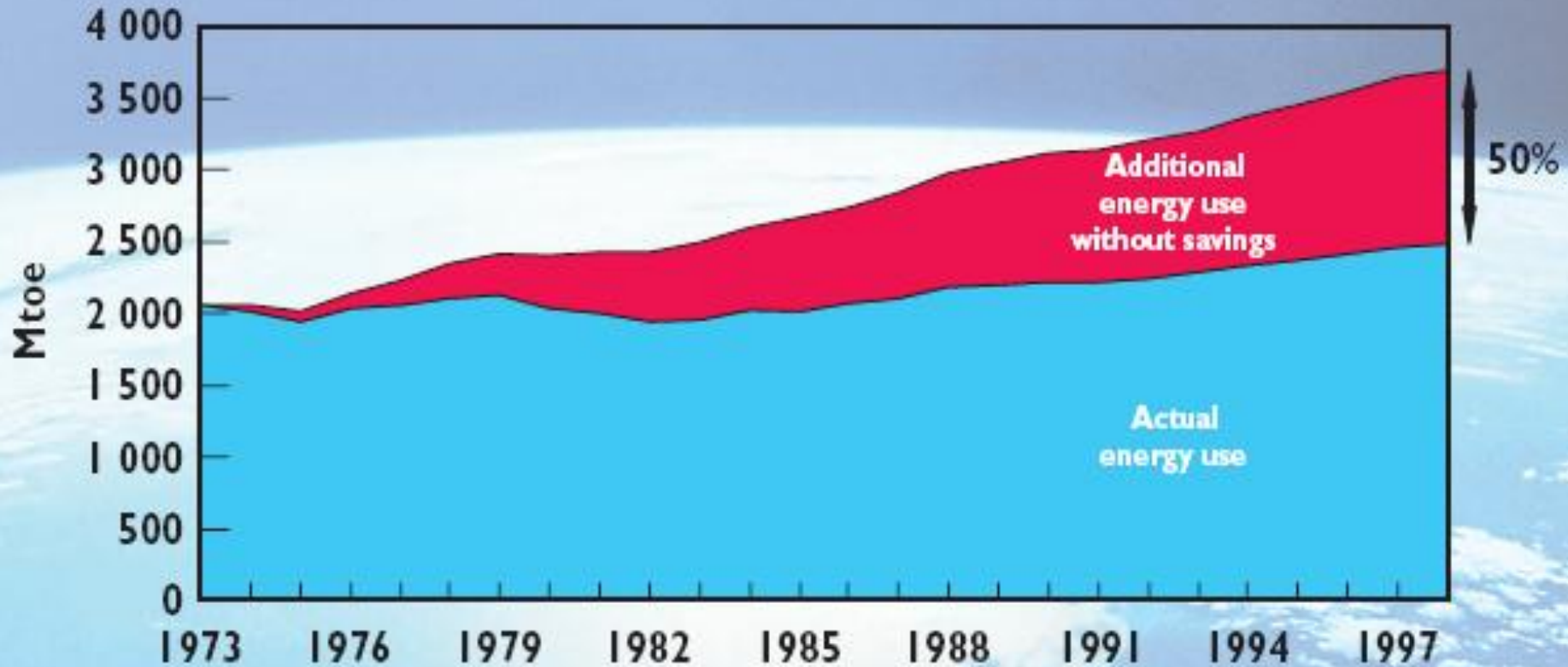
# Energy trends: Total primary energy consumption



# Energy trends: energy intensities



## Energy trends with/without savings (OECD 1973-1998)

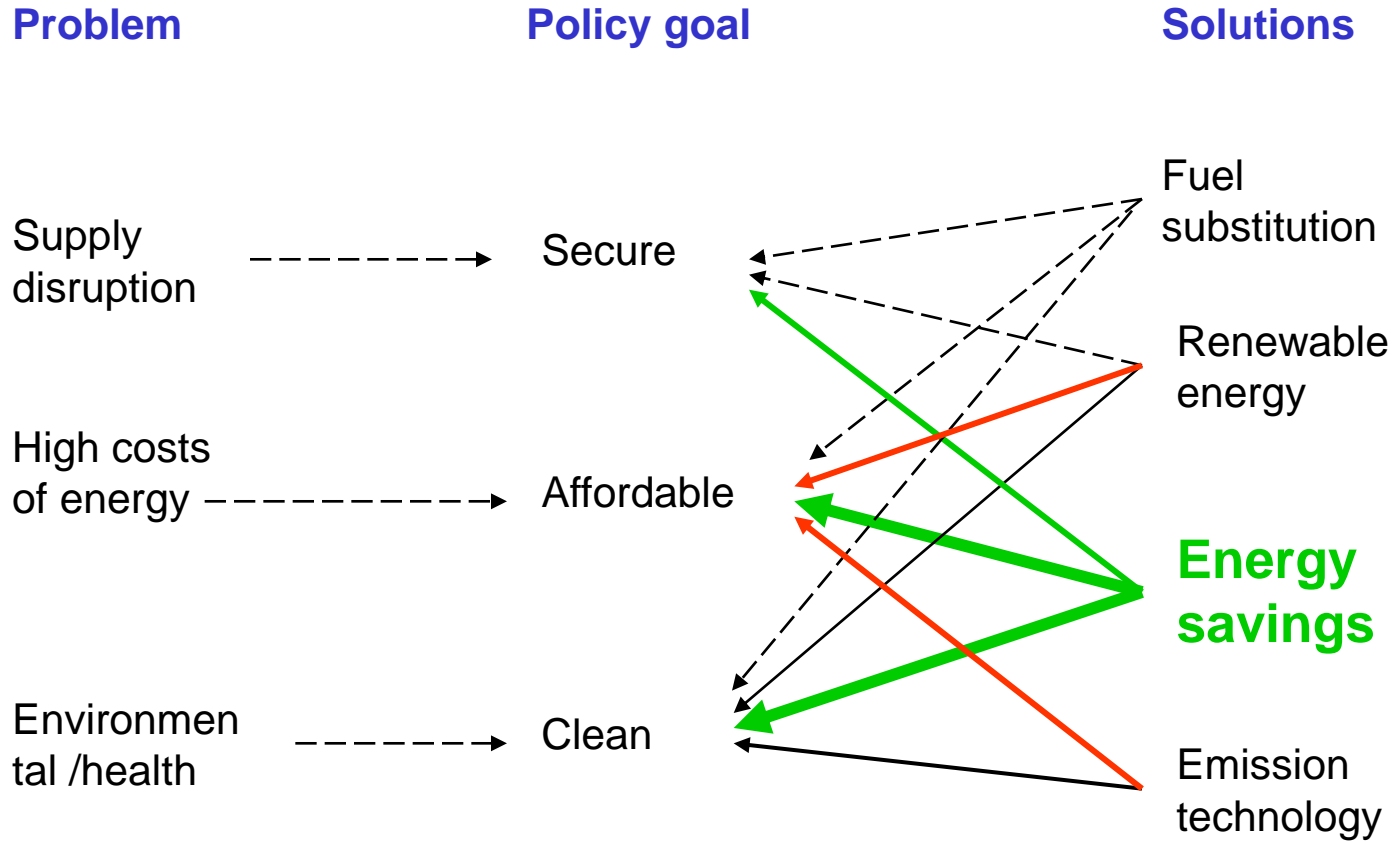


# What are energy savings ?

Doing the same activities with less energy use

- **Including:**
  - technical measures
  - good housekeeping
  - integrating systems (waste heat utilization)
- **Excluding:**
  - shift to less energy-intensive sectors
  - effect of economic breakdown

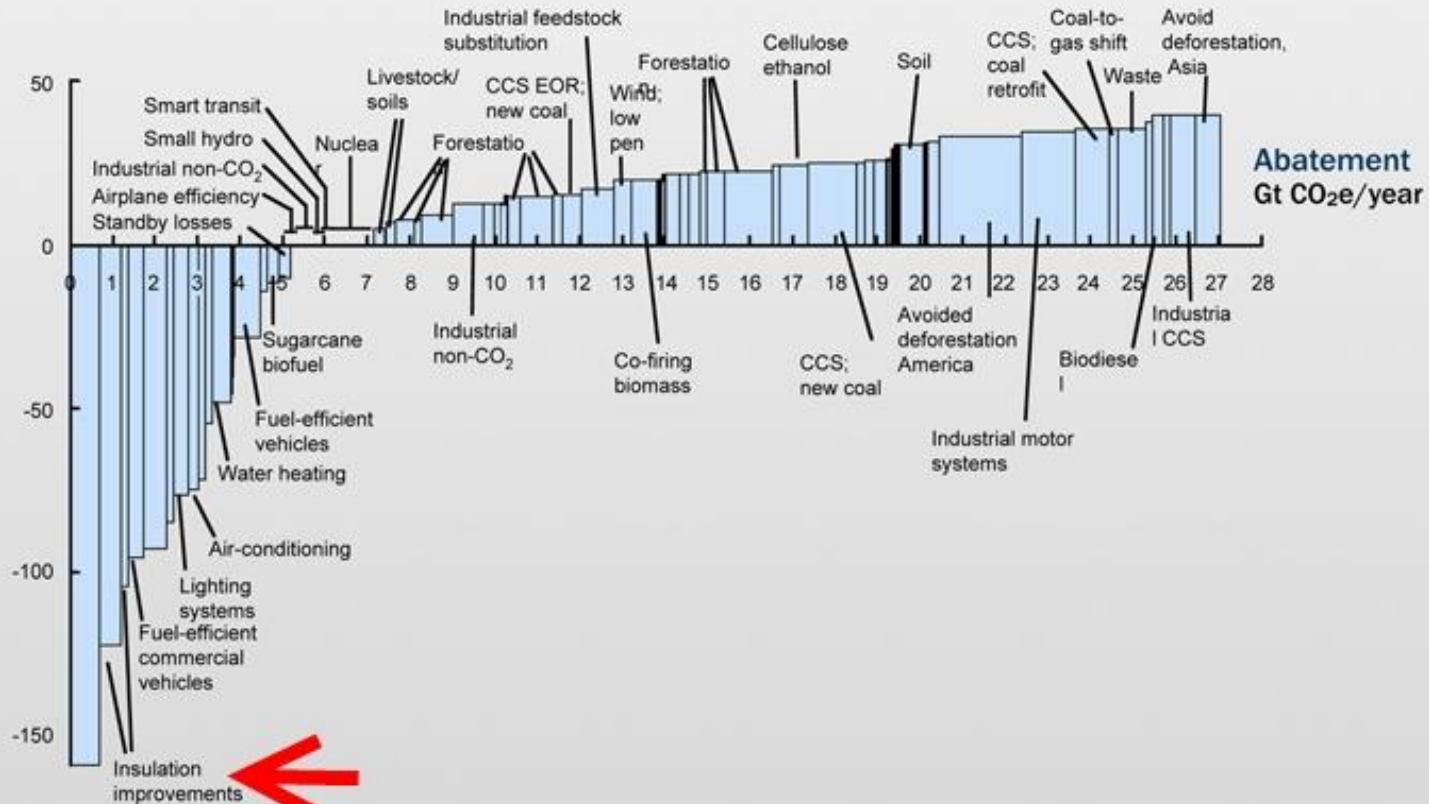
# Why savings: good for each problem and goal



# Why savings: cheapest option

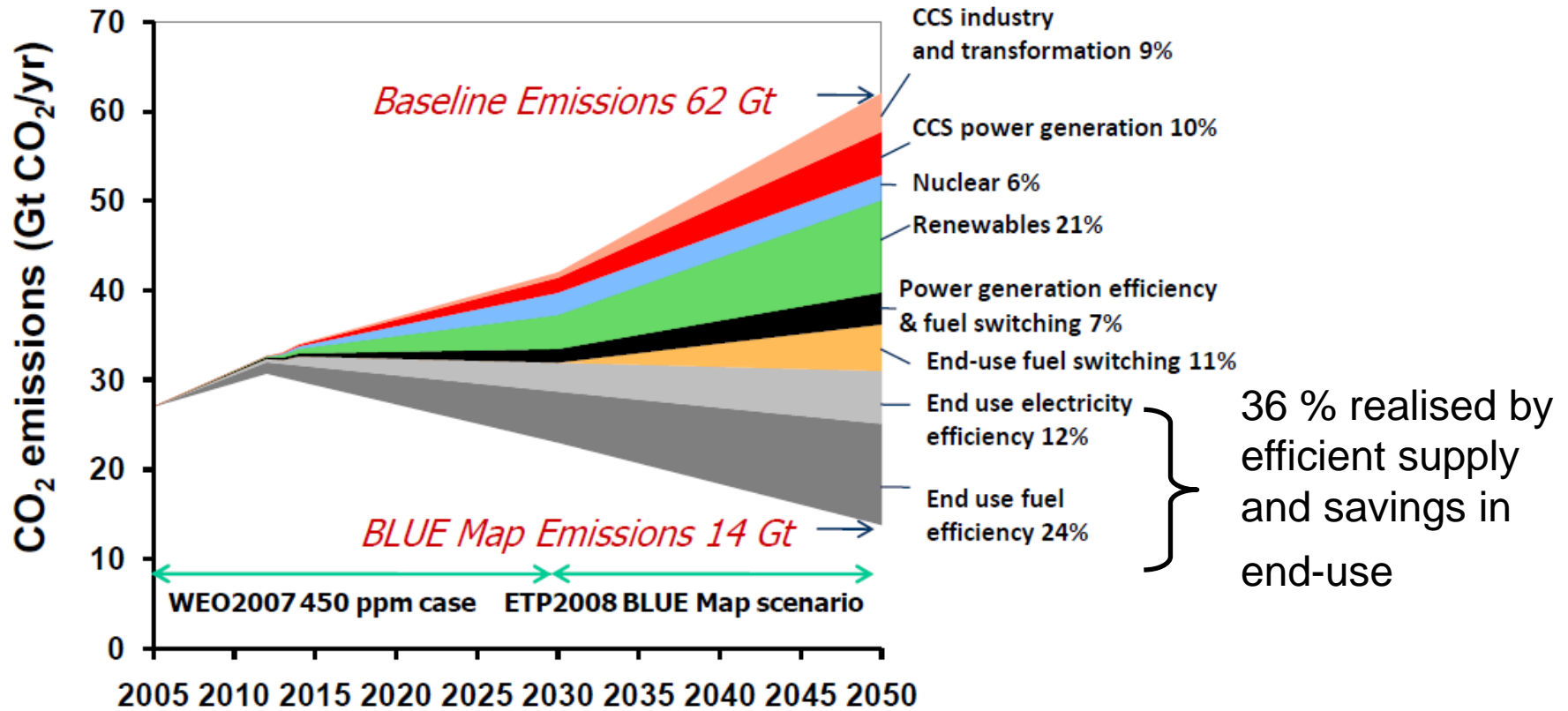
## THE COST CURVE PROVIDES A "MAP" OF ABATEMENT OPPORTUNITIES

Cost of abatement, 2030, €/tCO<sub>2</sub>e\*



\* Cubic feet of carbon equivalents.  
Source: McKinsey and Vattenfall analysis

# Why savings: also important in the long run



IEA 2008

# How can energy savings be stimulated?

## Regulation:

- NL: EPC new buildings, environmental permit
- EU: labels (buildings), efficiency standards (cars and appliances)

## Financial support

(subsidies and fiscal facilities)

## Energy taxes

## Other:

- Voluntary agreements
- Info and advice
- Sustainable purchasing



## Calculation of savings: not visible, but countable !

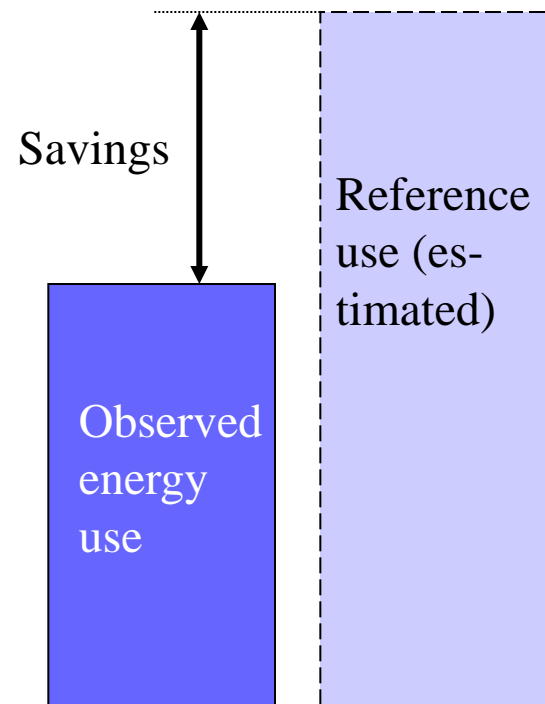
### What we see:

Energy use on meter or bill

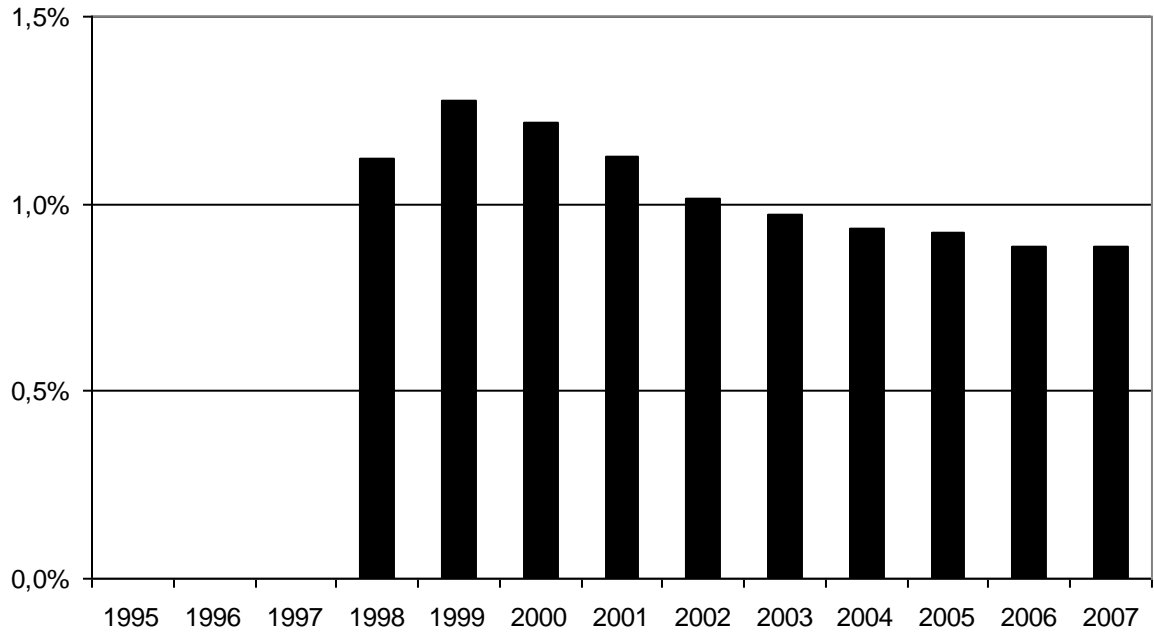
### What we estimate:

Energy use in case no saving measures would be taken  
(reference energy use)

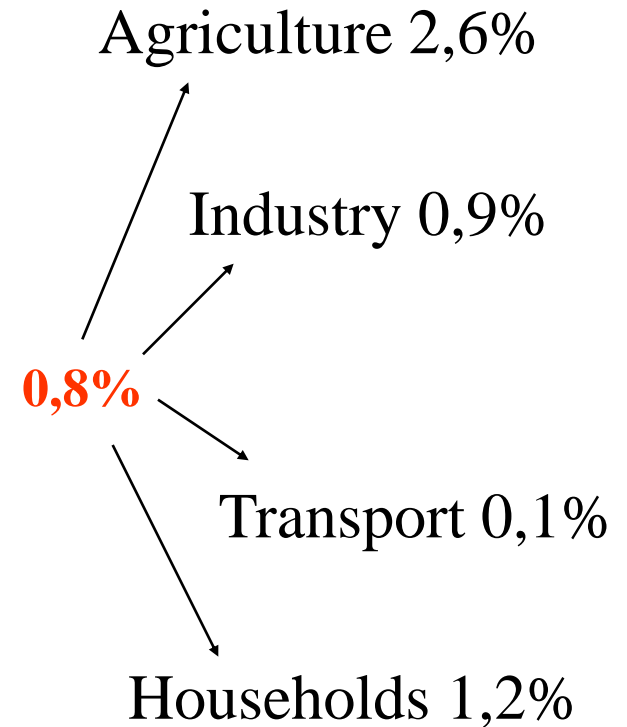
**Difference = savings = NOT  
consumed energy carriers**



# Calculation of realised savings per sector and total



■ PME: gemiddelde jaarlijkse besparing



## National goals and realised savings

### Goals (yearly):

- 1990-2010: 1,6%
- 1995-2020: 1,8%
- 2010-2020: increase to 2% in 2020

### Realised (PME):

- 1995-2004: 1,3%
- 2000-2008: 1,0%

### Accounting Office evaluation:

- Goals never attained
- Less policy than planned

## Why do energy users not save?

- Saving options not available
  - Lack of knowledge about saving options
  - Ownership/control (split incentive)
  - Natural moment for investing over
  - Lower consumption than average
  - Not motivated (financial)
  - Uncertainty about performance and benefits (energy prices)
  - No trust in suppliers of saving options
- 
- Rebound effect

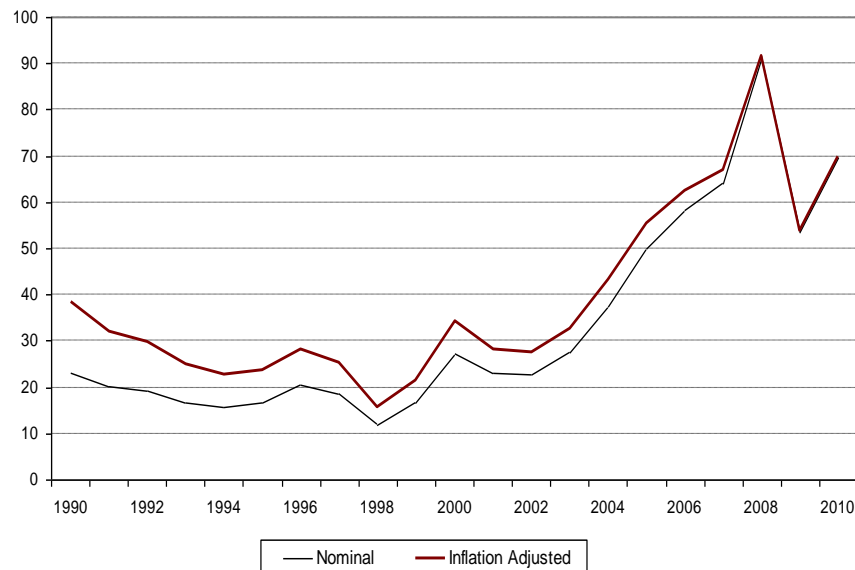
# Why does policy not work?

Netherlands ever more dependent on EU policy

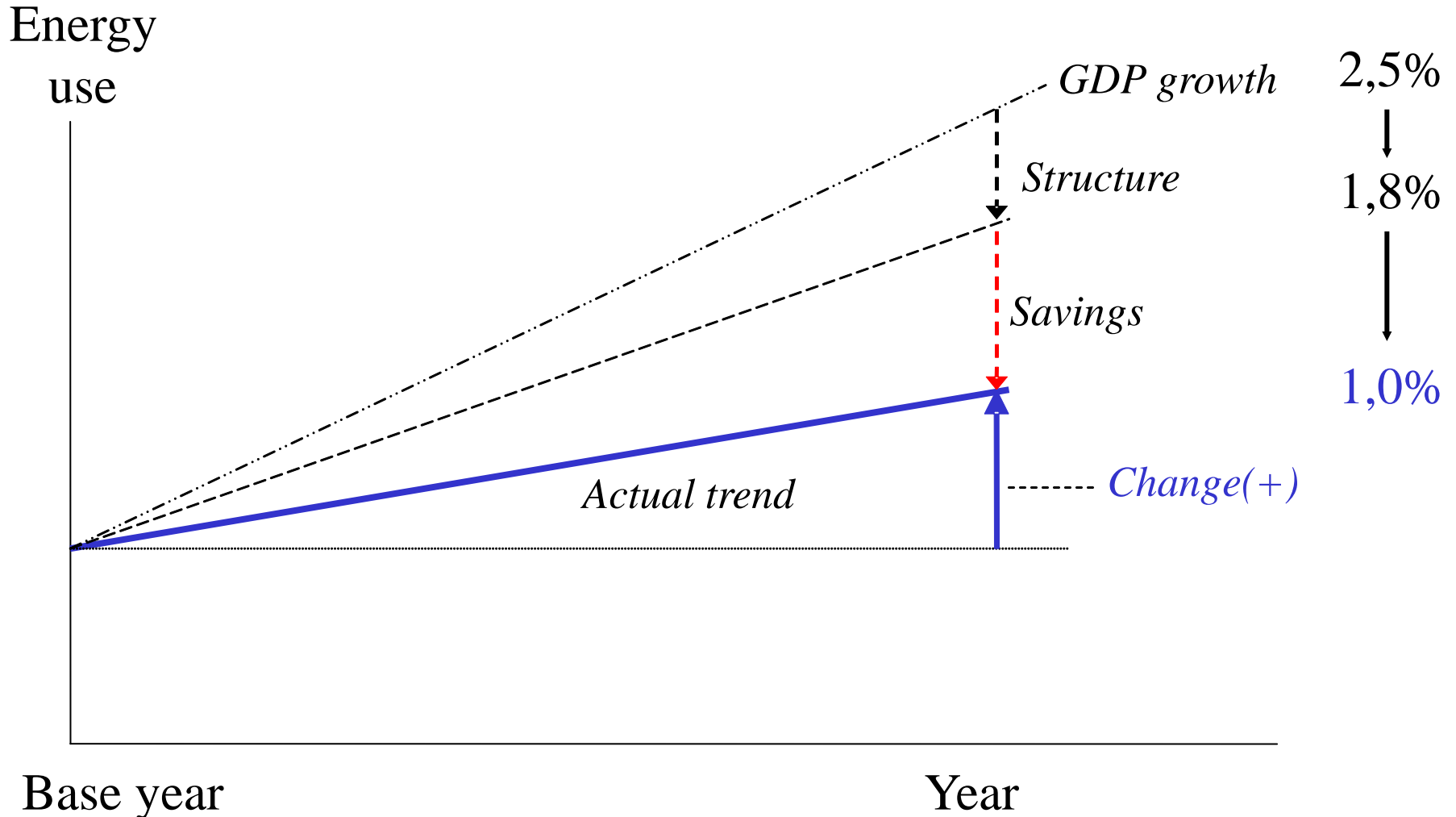
Fluctuating energy prices  
(higher investment risks)

Actors put at distance of government  
(social renting of dwellings, distribution companies)

Varying priorities in policy, also due to  
lack of interest groups for savings



# Present savings policy: less increasing energy use



# Strong savings policy

## Maximum policy via EU:

- stringent standards for energy systems
- 'bottom' in emission trading system

## Structurally high energy prices

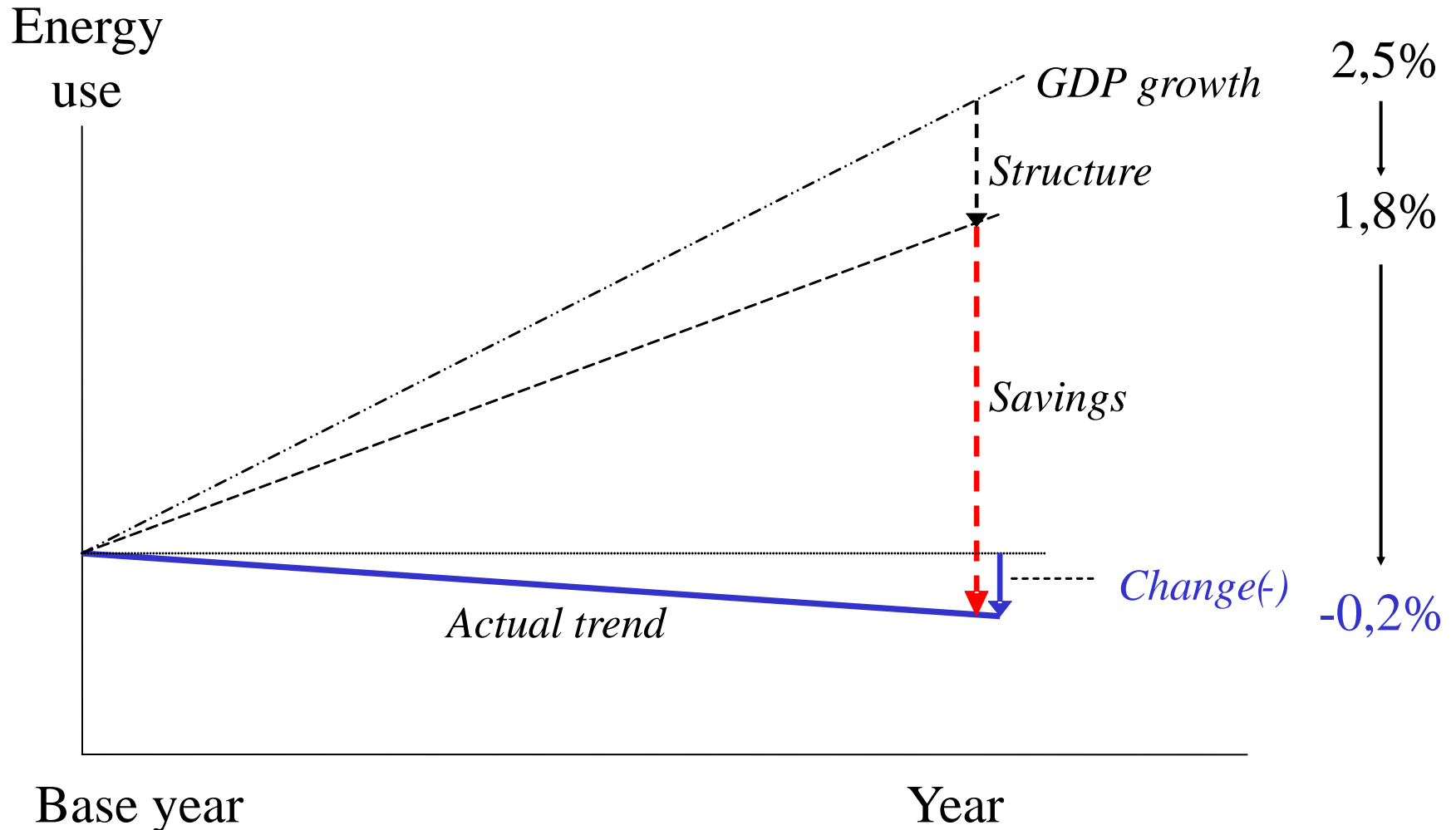
- energy tax coupled to oil price / labor costs
- prevents new dis-saving trends

**Obligations** instead of subsidies and agreements  
(see systems in France, Italy, UK, Belgium, etc.)

## Savings as normal economic activity

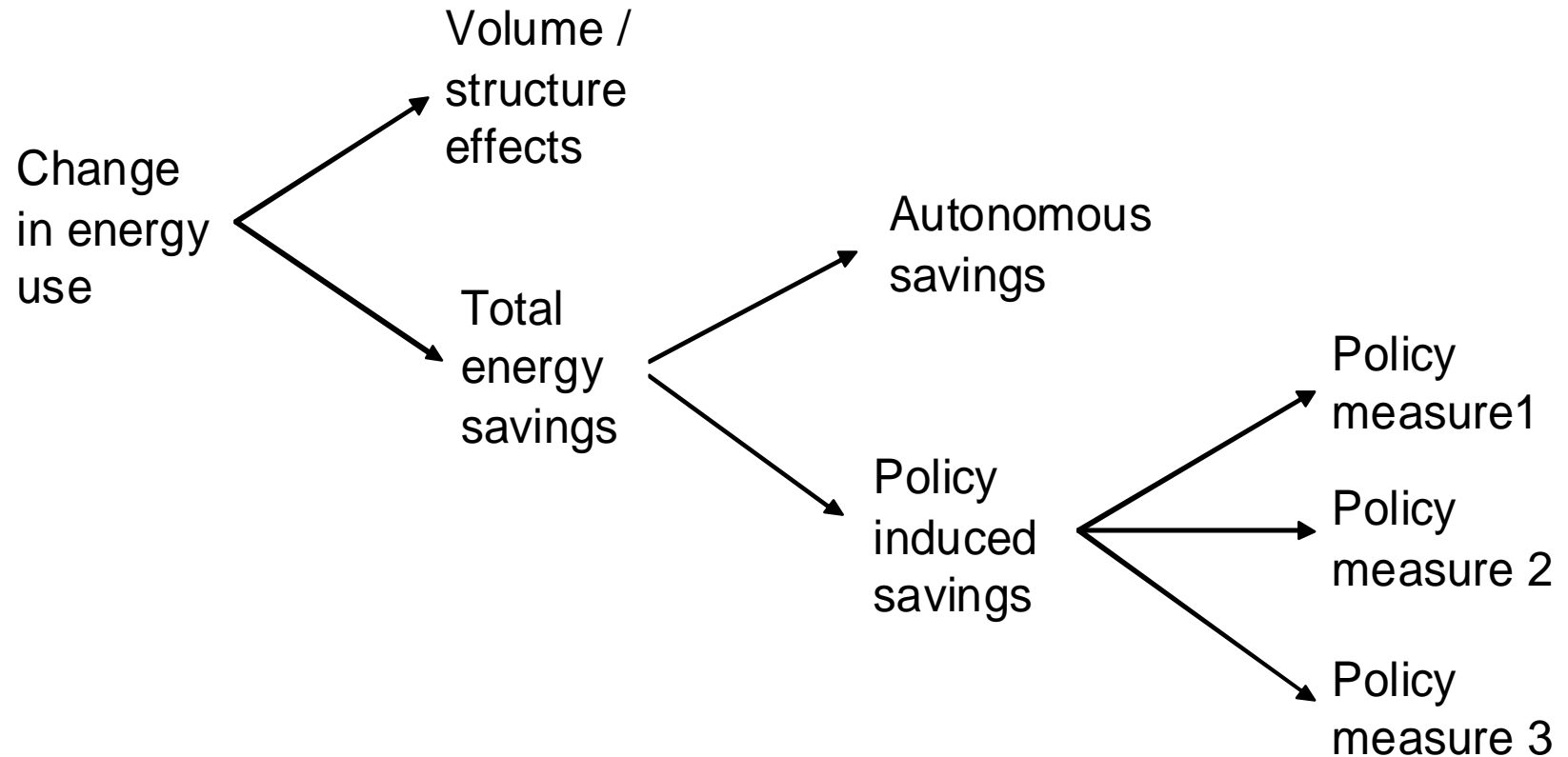
(ESCOs, guarantees, lease systems, etc.)

# Strong savings policy > decreasing energy use

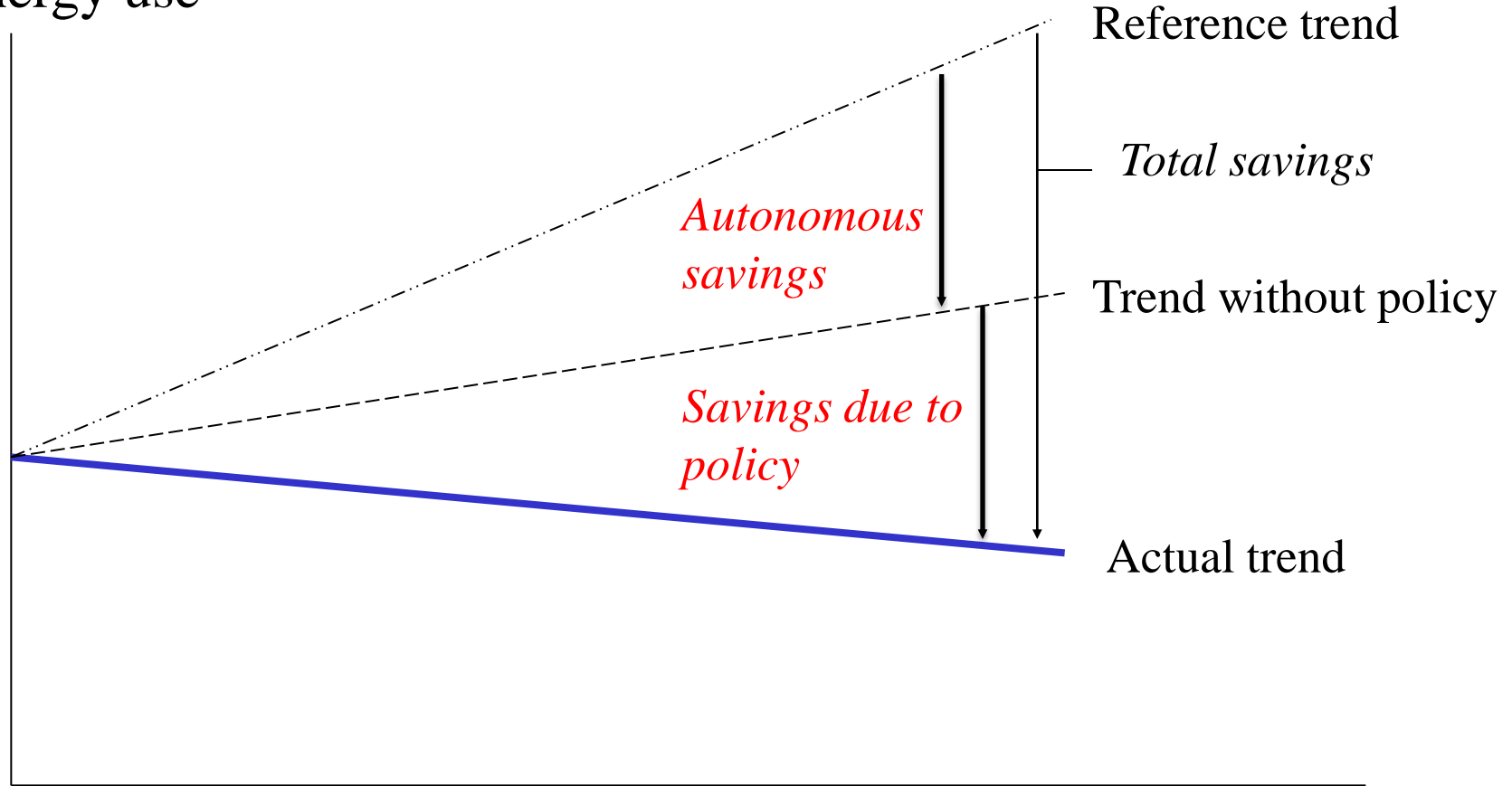


# APPENDIX (not presented)

# Total savings and policy induced savings



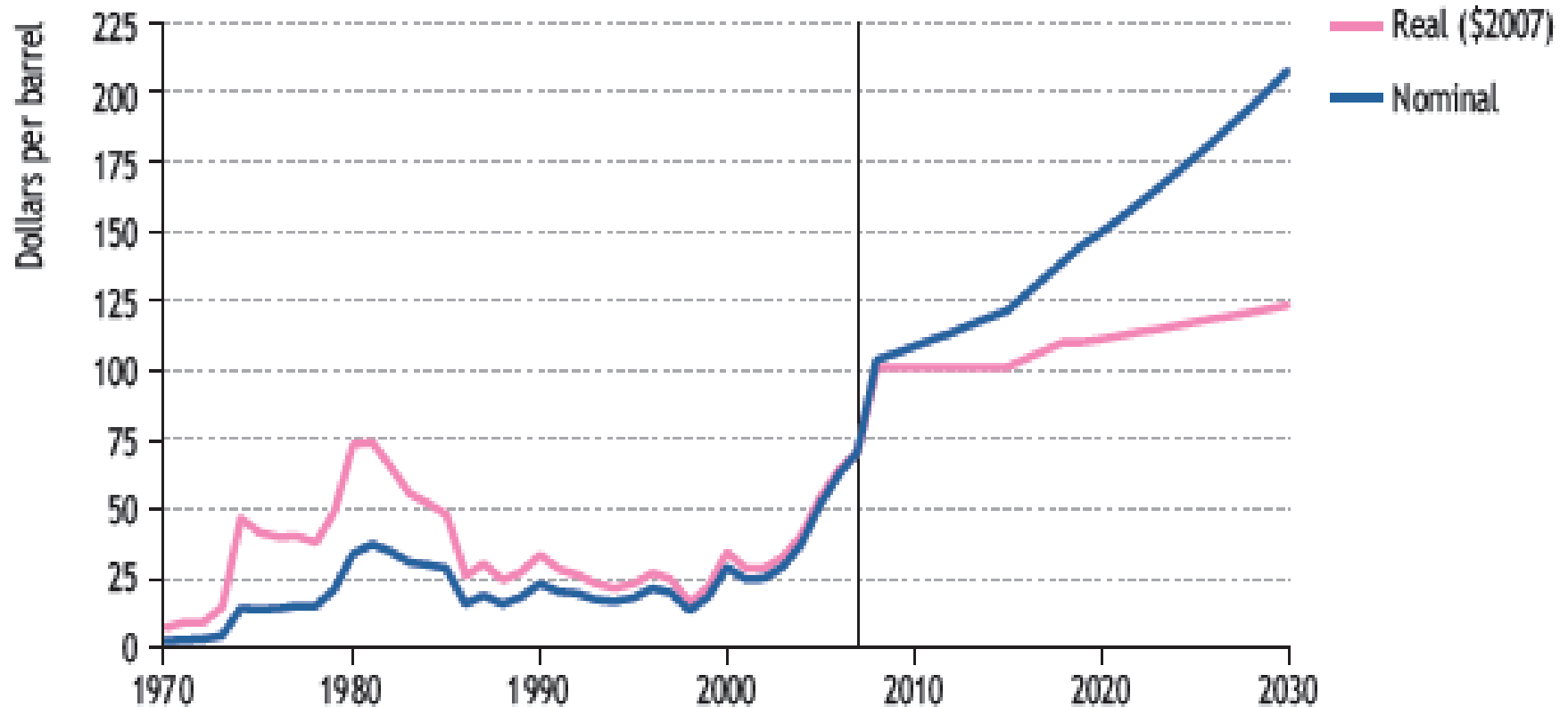
Energy use



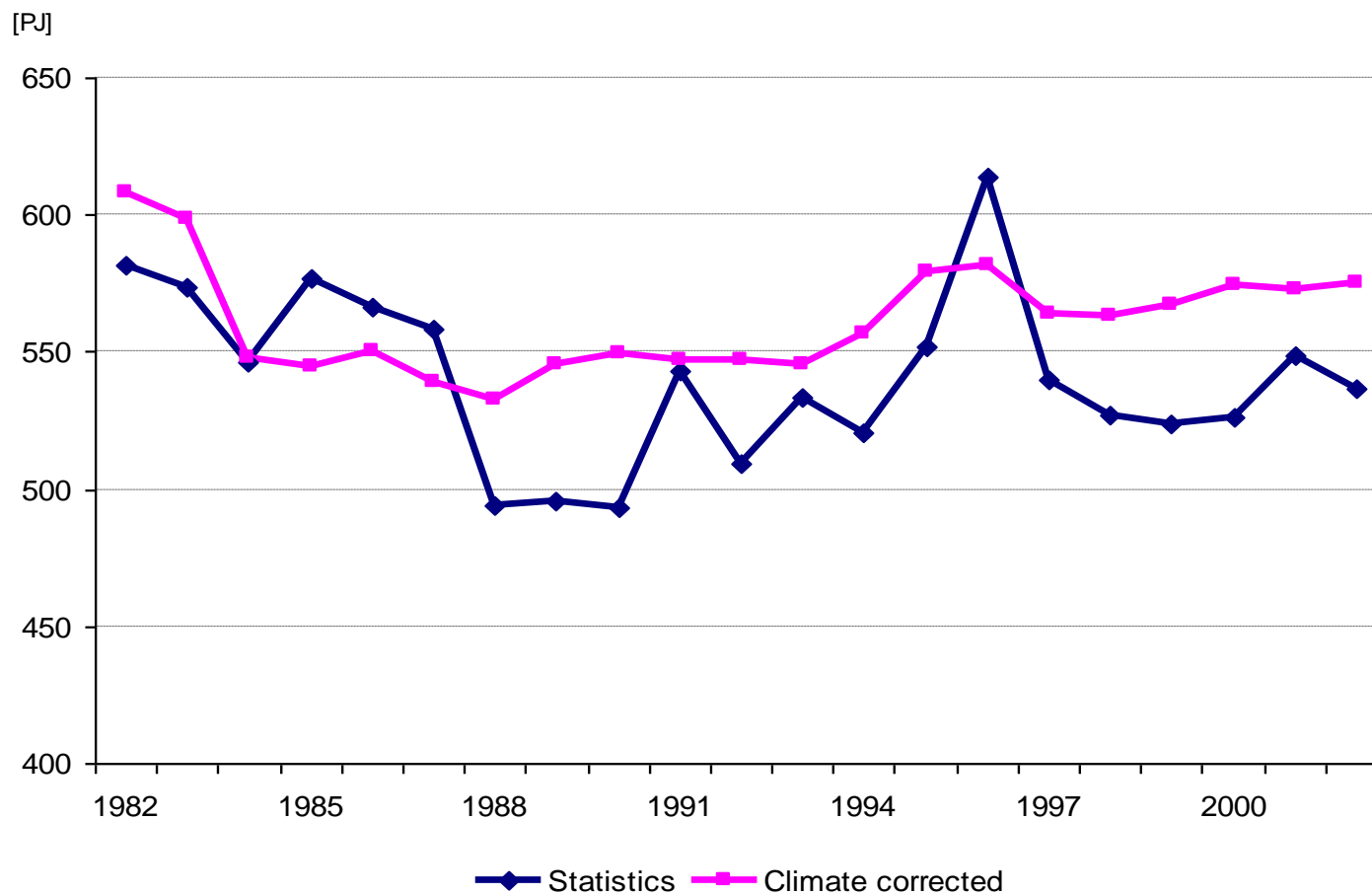
Base year

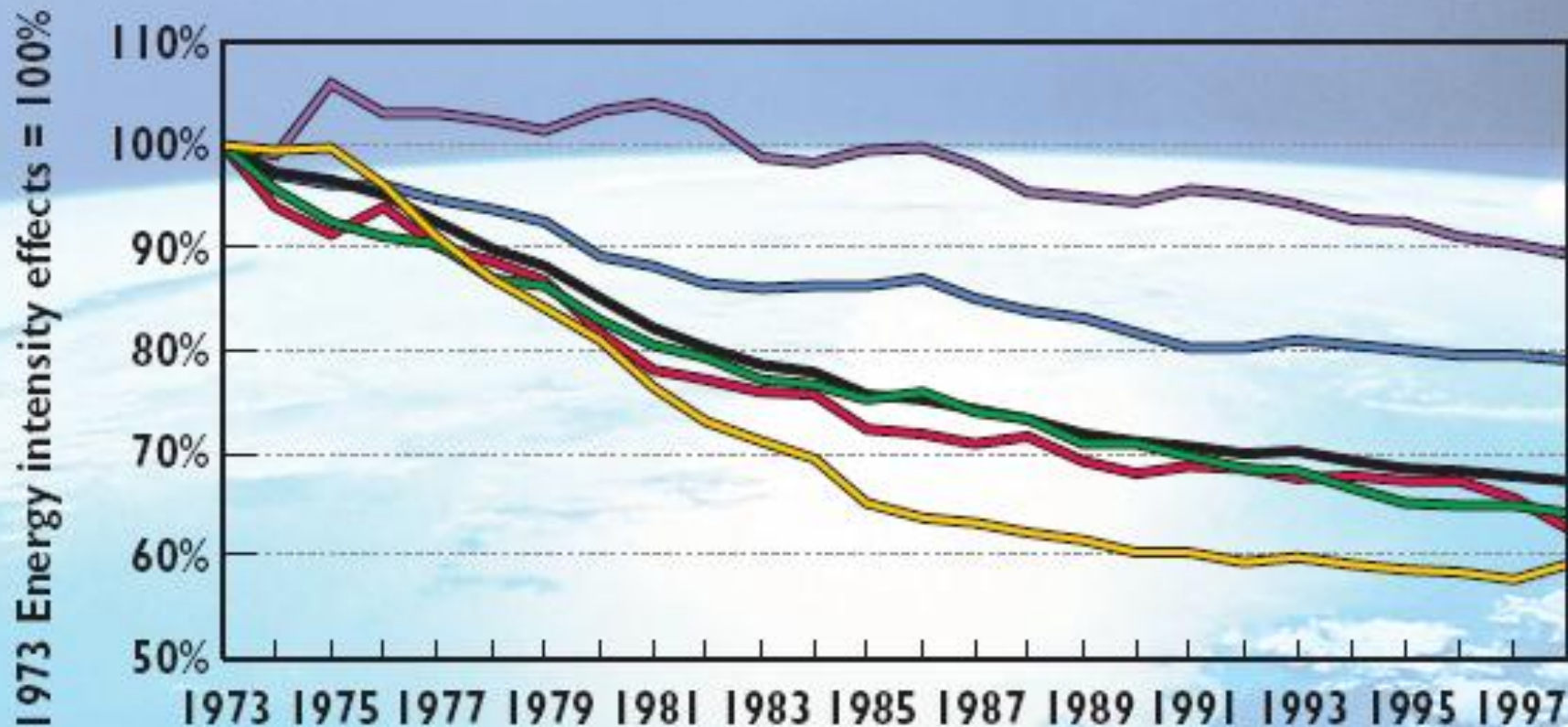
Target year

**Figure 1.4 ● Average IEA crude oil import price (annual data)**



# Energy use Households with/without climate correction





— Freight transport

— Passenger travel

— Total economy

— Service

— Households

— Manufacturing