

# Instruments to achieve reductions in energy consumption through sufficiency: **Financial impacts for households and distributional considerations**

## **Behave 2018**

### F5. Policy implementation and evaluation II

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Results from a current project for the Federal Environment Agency (FKZ 37EV 16 124 0)

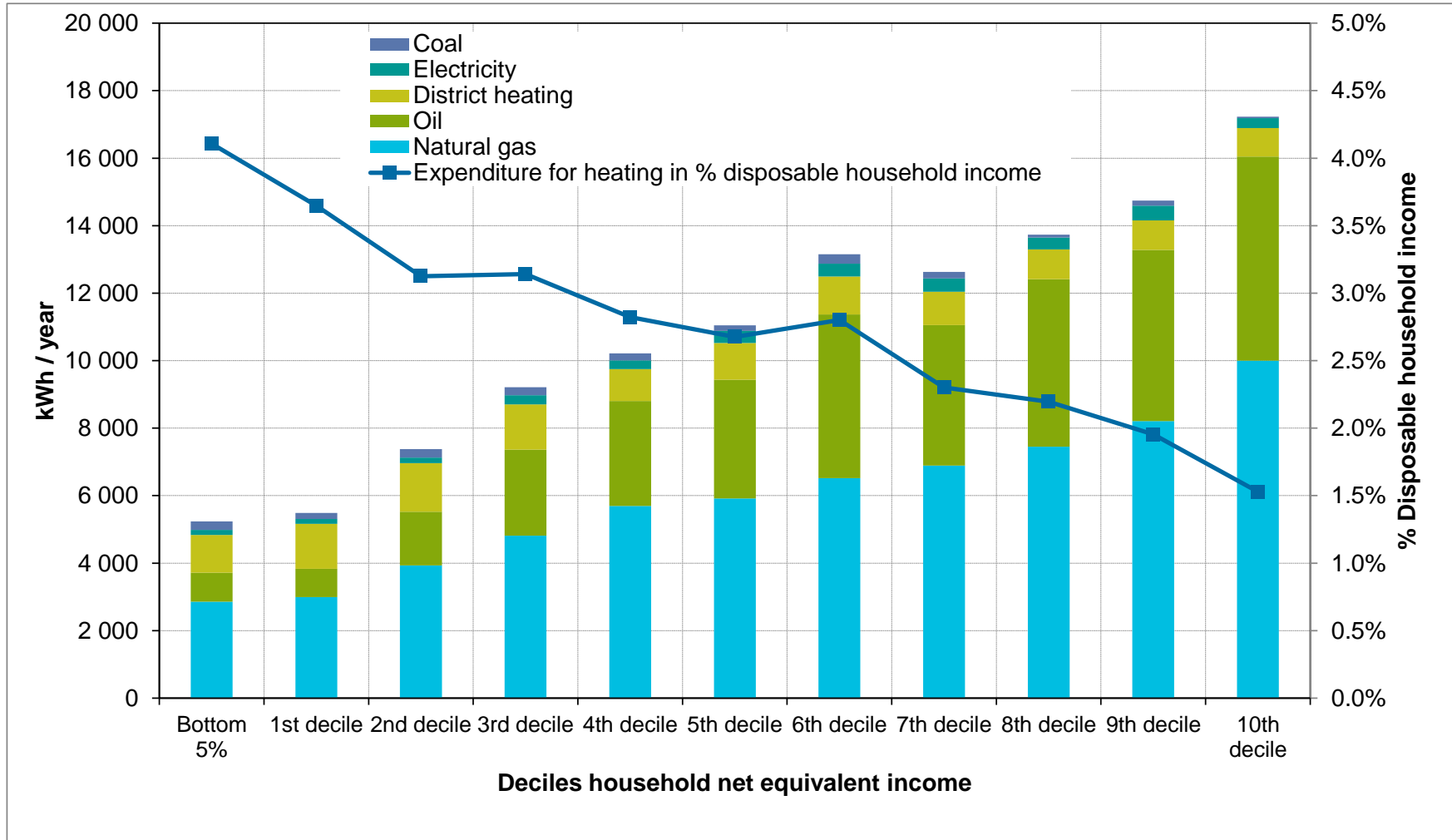
# Project on behalf of the Federal Environment Agency: Instrumenting the reduction of energy consumption through changes in behaviour

- Reduction of living space, reduction of electricity consumption
- Step 1: Identifying target groups
- Step 2: Identifying overall reduction potentials
- Step 3: Analysis of barriers (literature, interviews)
- Step 4: Developing policy instruments
- Step 5: Quantifying reduction potential per policy instrument and associated costs
- Step 6: Analysing impacts for households that carry out the measures addressed by policy instrument
- ...

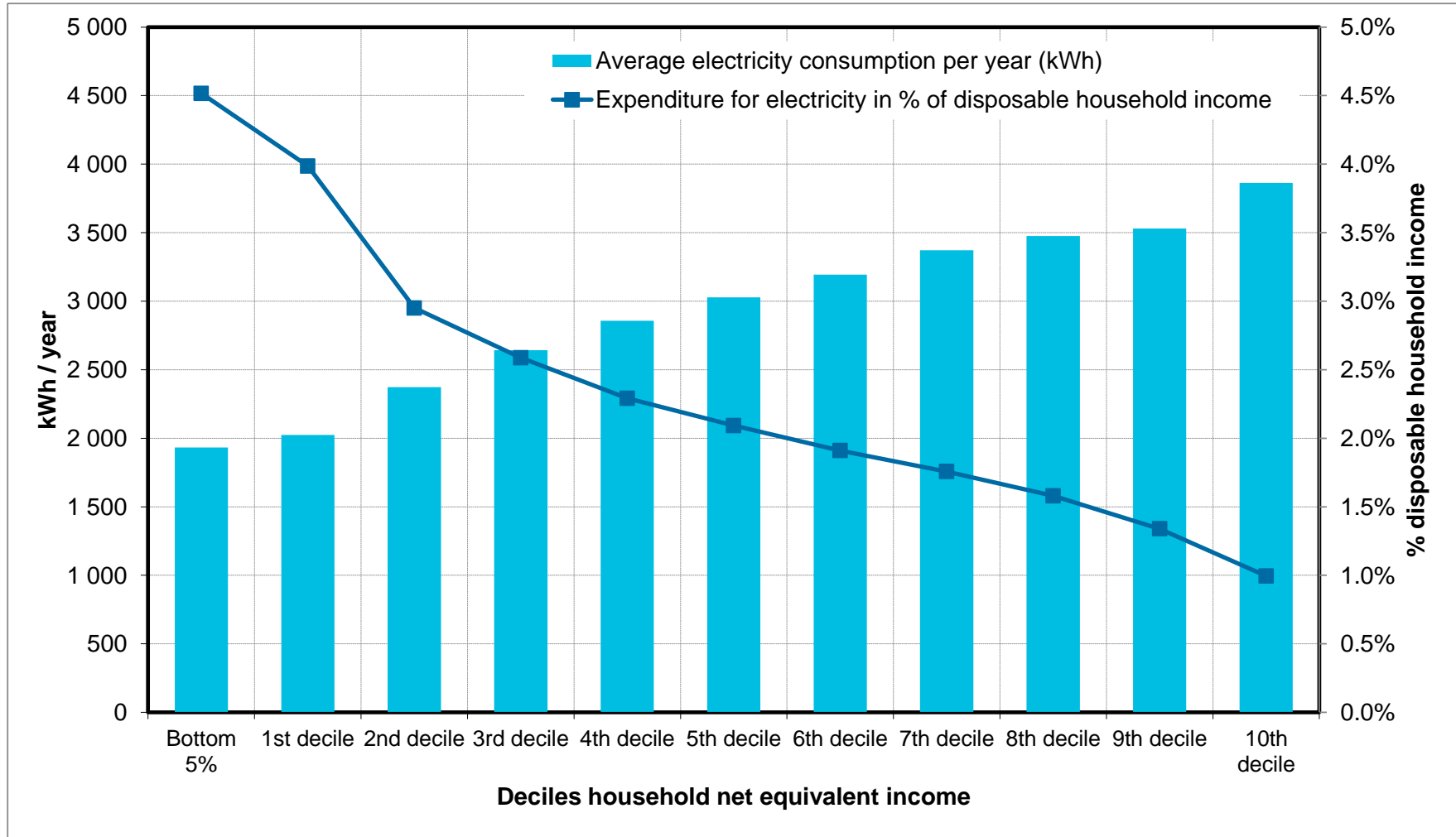
# Why look at financial impacts and distributional effects?

- Financial impacts of a measure can help us understand how attractive this measure may be *financially* from the point of view of a household – and whether this attractiveness varies between different household types
- This information can be used to design policy instruments
- Consumption of and expenditure for heat and electricity are distributed unevenly in society
- Need to analyse whether novel policy instruments may lead to positive or adverse distributional effects

# Heating energy consumption per income deciles of German households

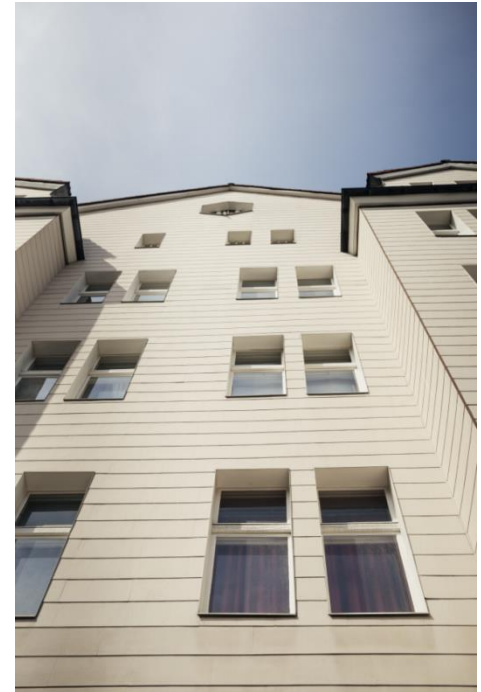


# Electricity consumption per income deciles of German households

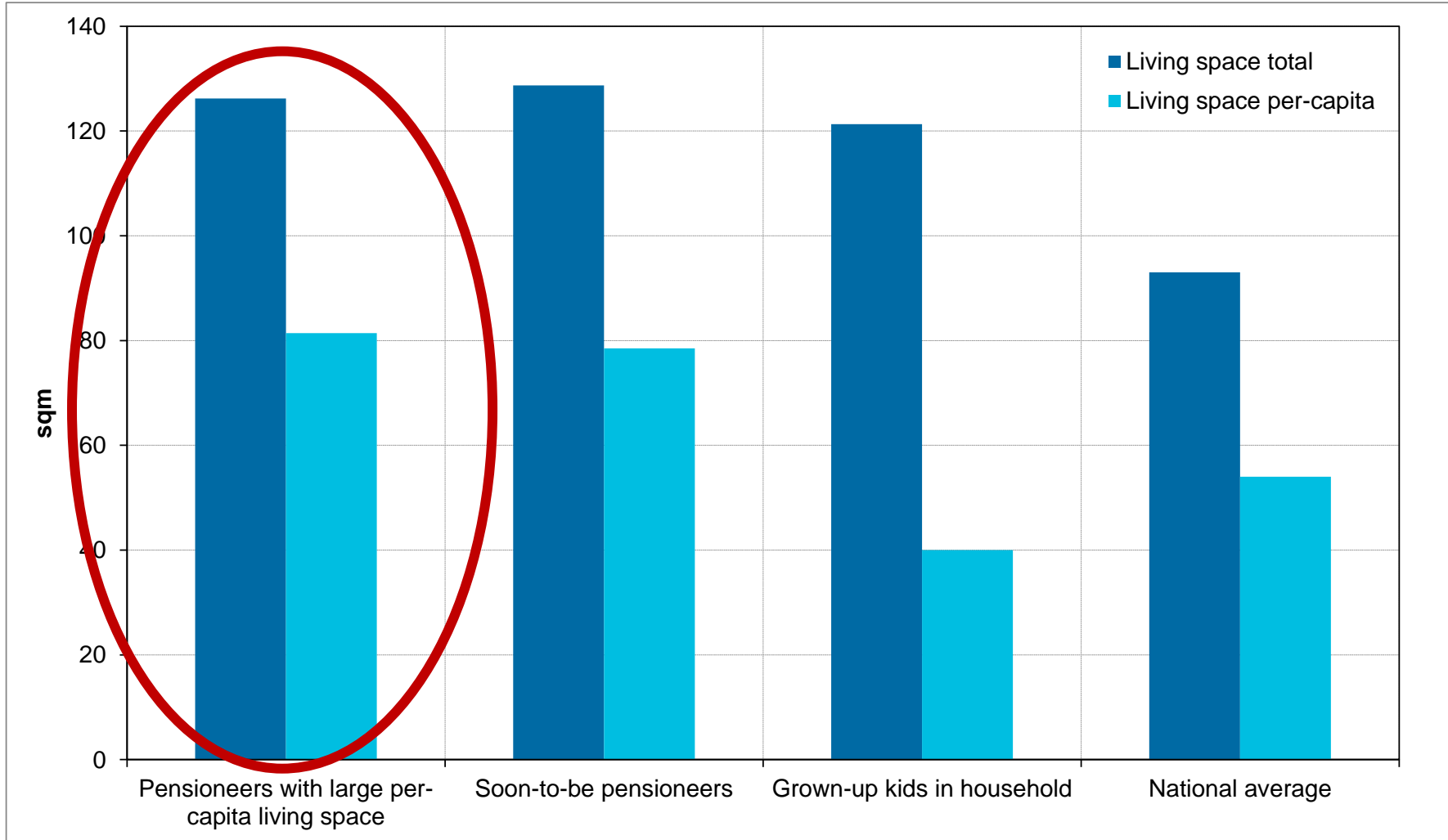


# Reduction in living space

- Measures
  - Splitting the owner-occupied home
  - Sub-letting a room
  - Moving into a smaller apartment
- Instrument: Combination of information schemes (a local office advising households on space-saving housing alternatives) and investment support

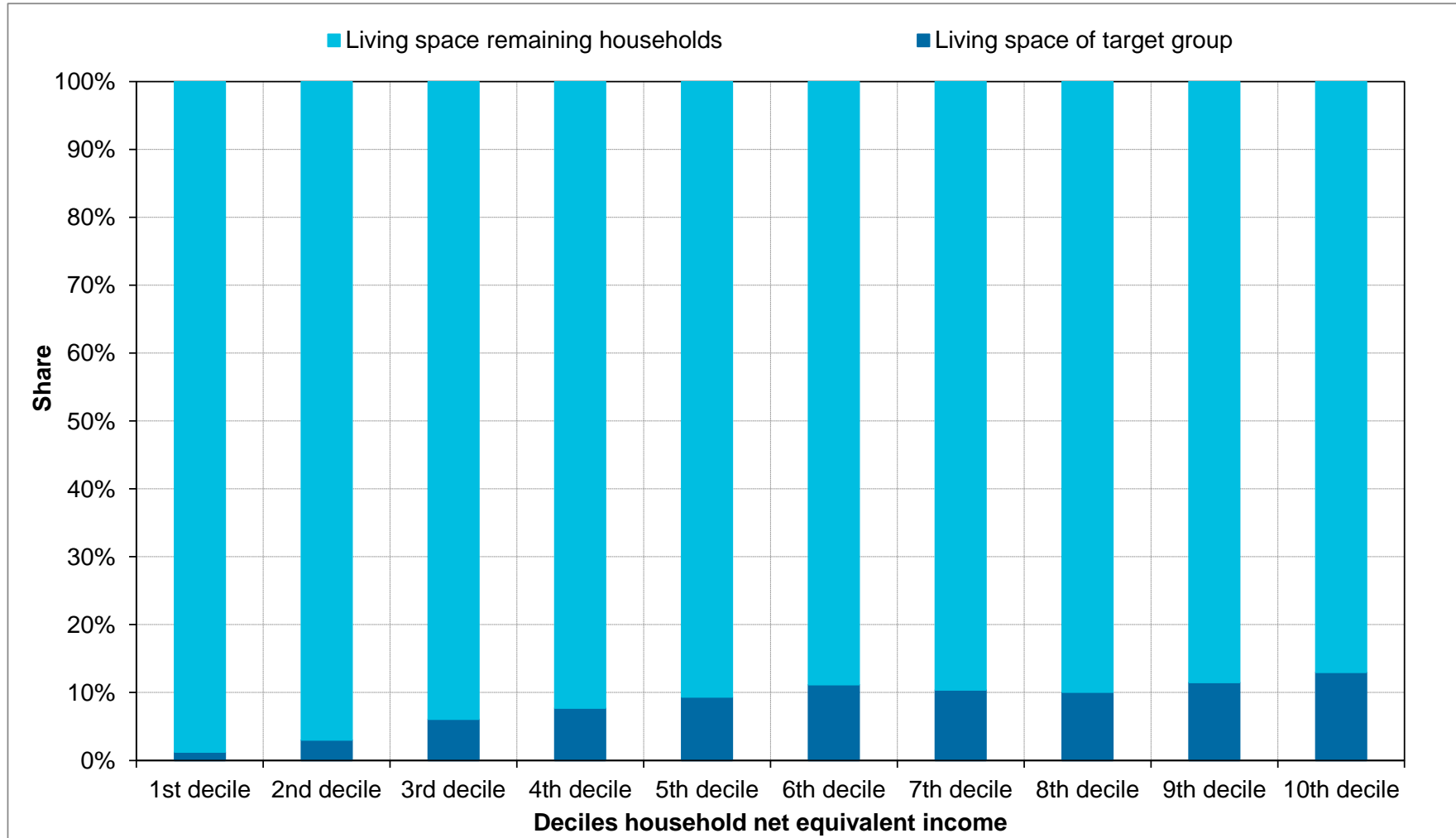


# Target groups for a reduction in living space



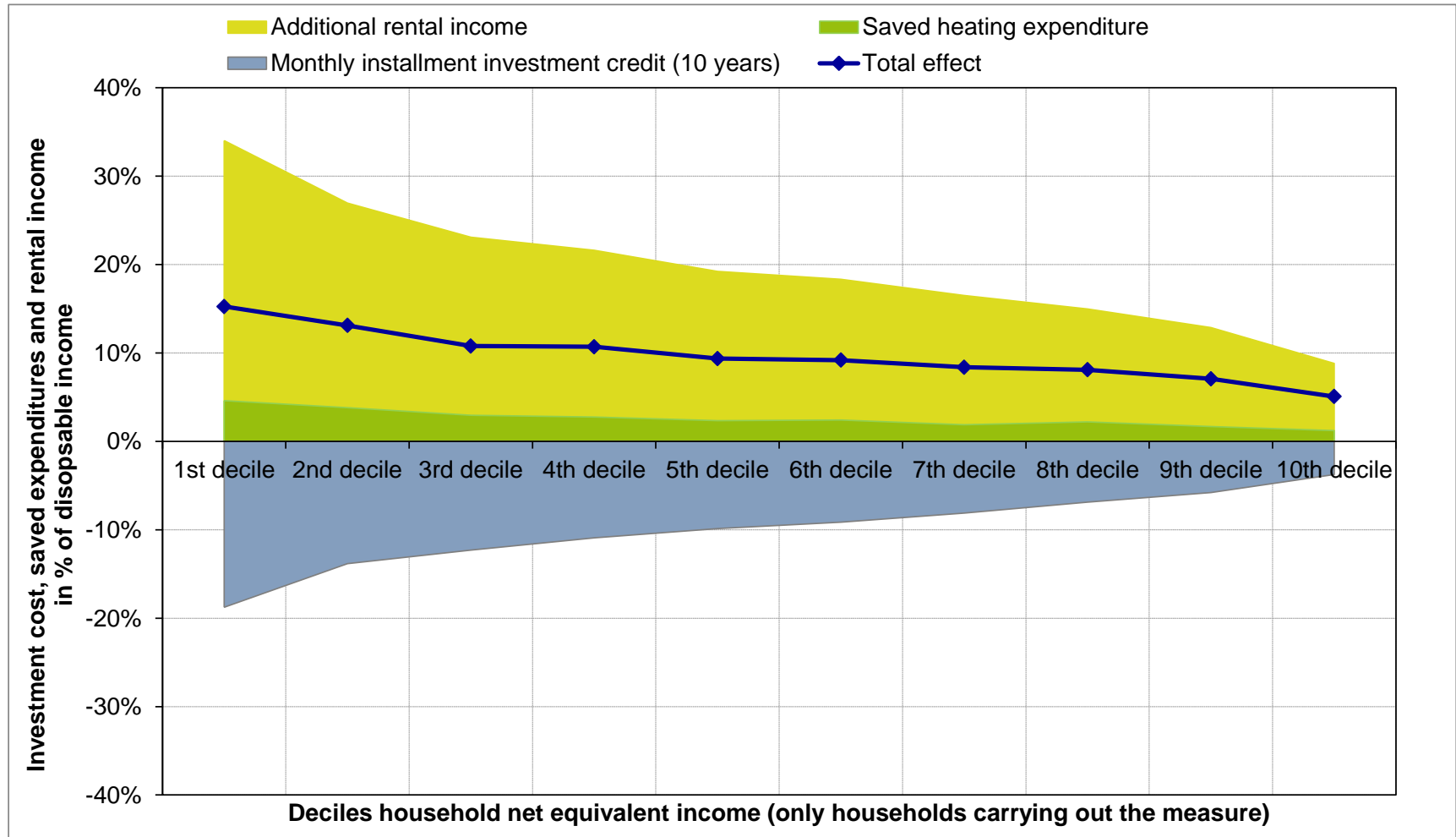
# Splitting the owner-occupied house

## In which income deciles can we find the target group?



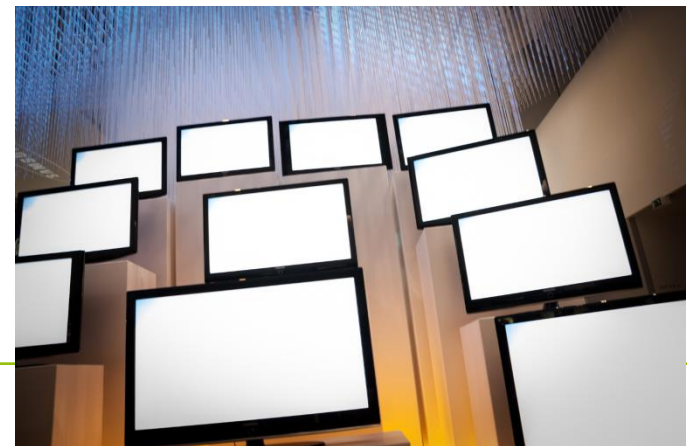


# Distribution of financial impact: Household splitting their owner-occupied home



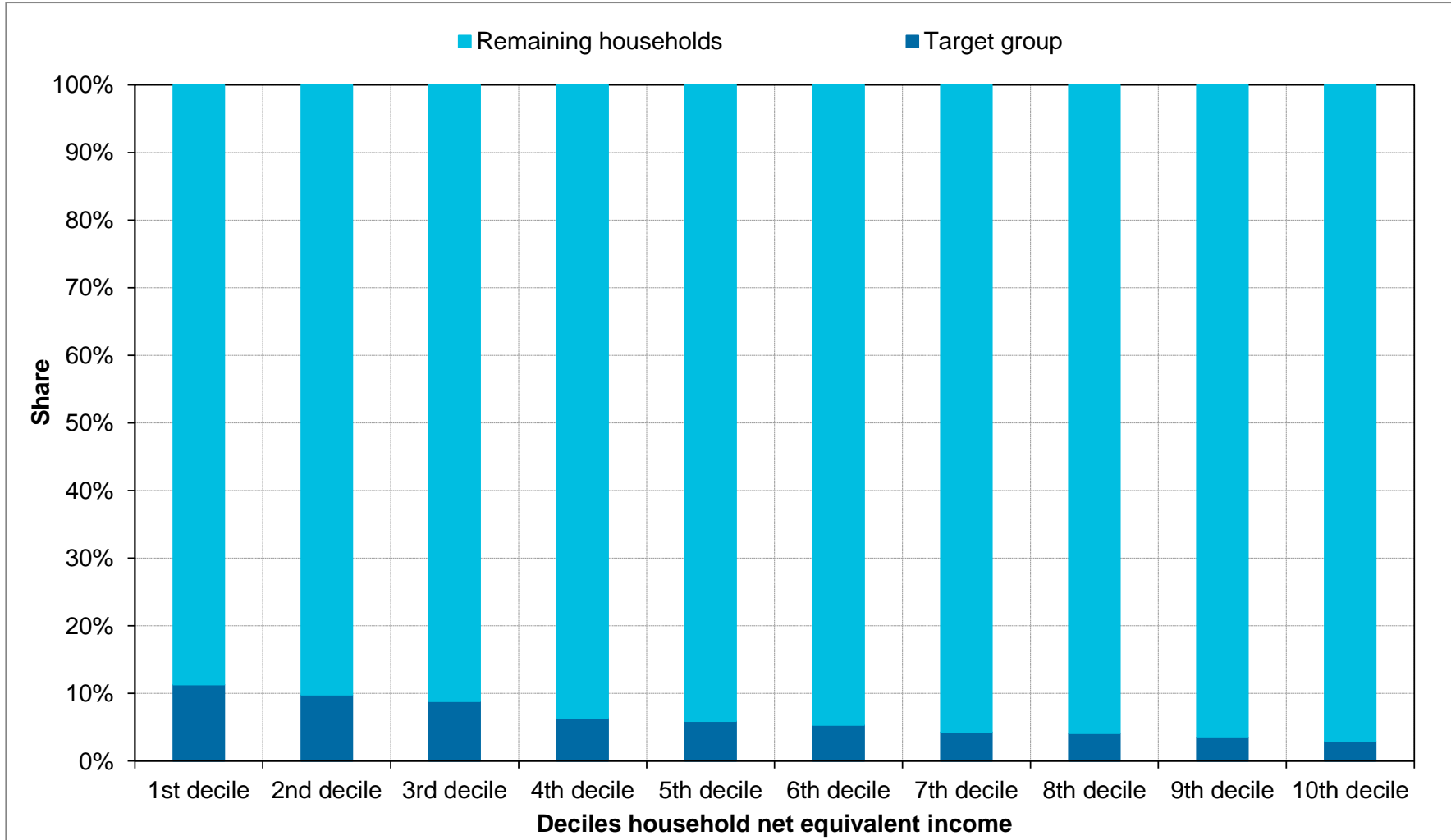
# Reduction of household electricity consumption

- Measures
  - Scrapping a freezer that is no longer used
  - Buying adequately sized appliances
  - Reducing electricity consumption for showering
  - Reducing TV time
- Instruments: Mix of information campaigns, free appliances, Ecodesign changes, scrappage bonus

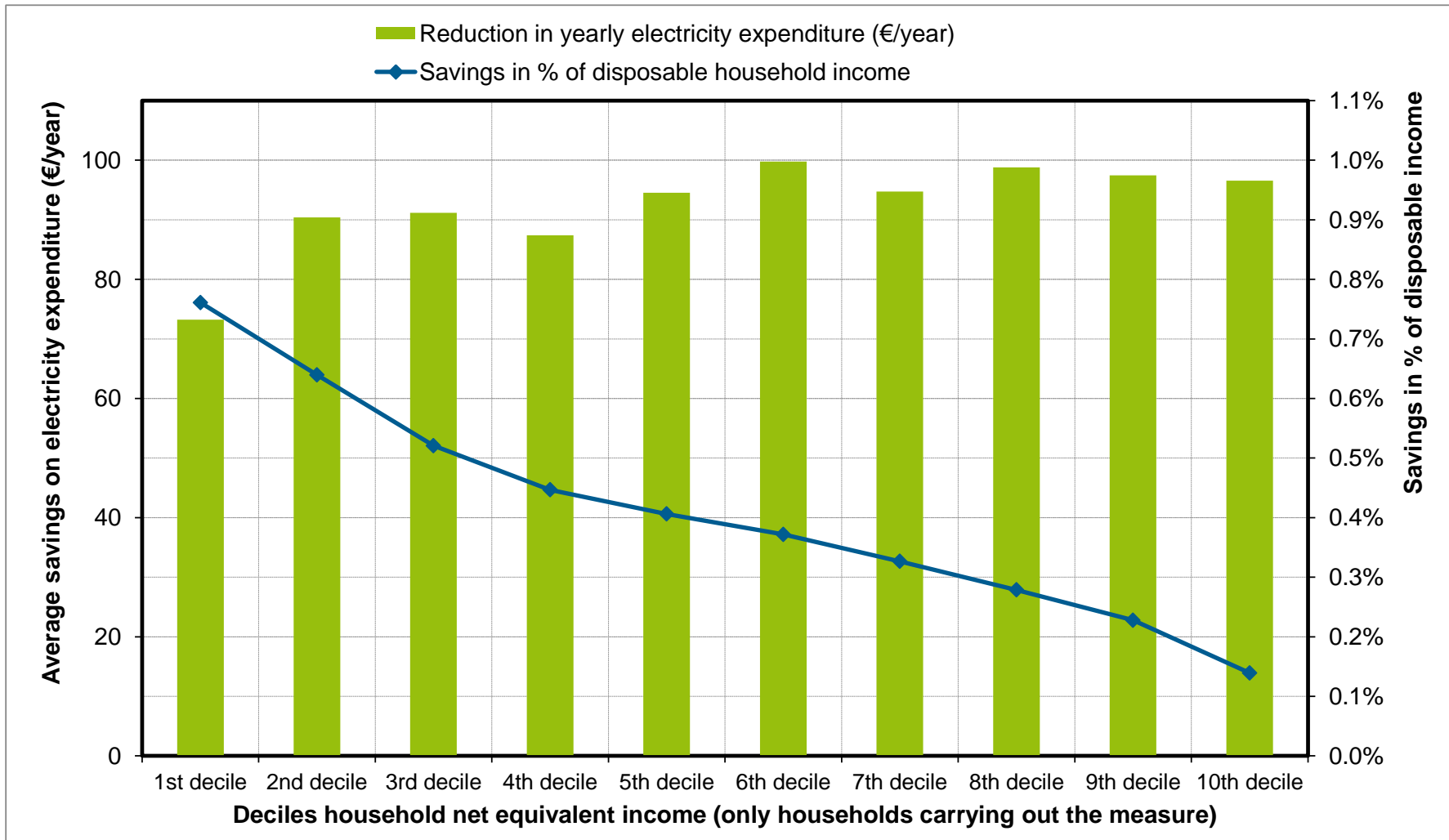


# Reducing electricity consumption for showering

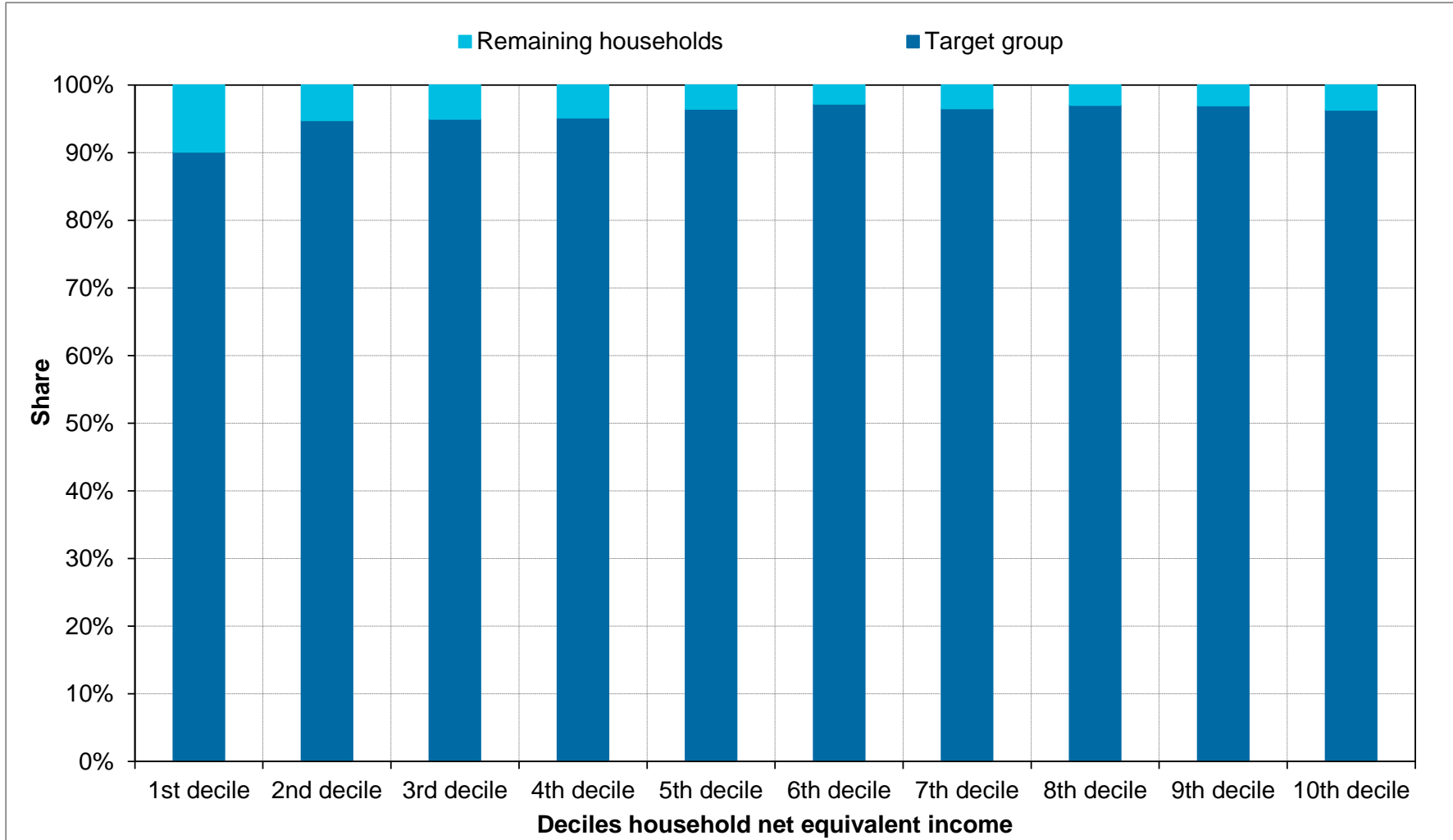
## In which income deciles can we find the target group?



# Distribution of financial impact: Showering one less time a week



# Target group for reducing TV time



## To sum up

- Analysis of socio-economic effects given a household has decided to carry out the measure
- Measures are economically advantageous for households carrying them out and are socially compatible in providing relatively higher benefits to low-income households.
- In addition to highlighting non-financial benefits, information on financial impacts can be used in communication to overcome barriers.
- This applies not only to saving on energy expenditure, but also, f.e. additional rental income

Thank you for your kind attention



Any questions?

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# Backup

# Distribution of financial impact: Household splitting their owner-occupied home 5 year payback time

