



Strom gespart,
Fußball
gekauft

“Stromspar-Check”
Energy-savings check for low-income households

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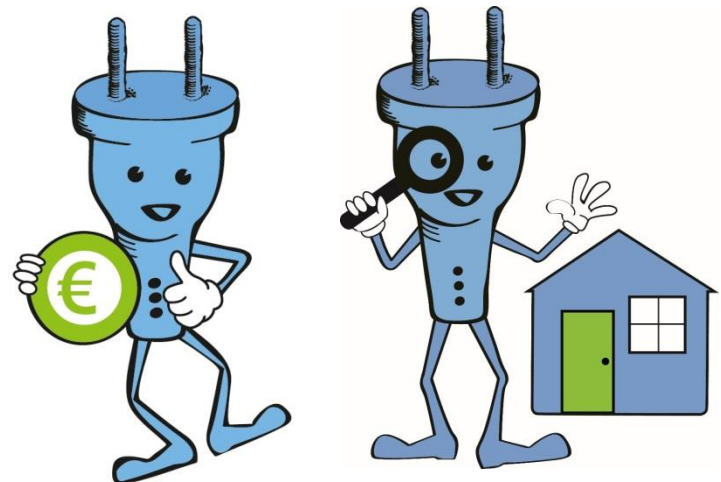


Deloitte.

Energy-savings check for low-income households

Overview:

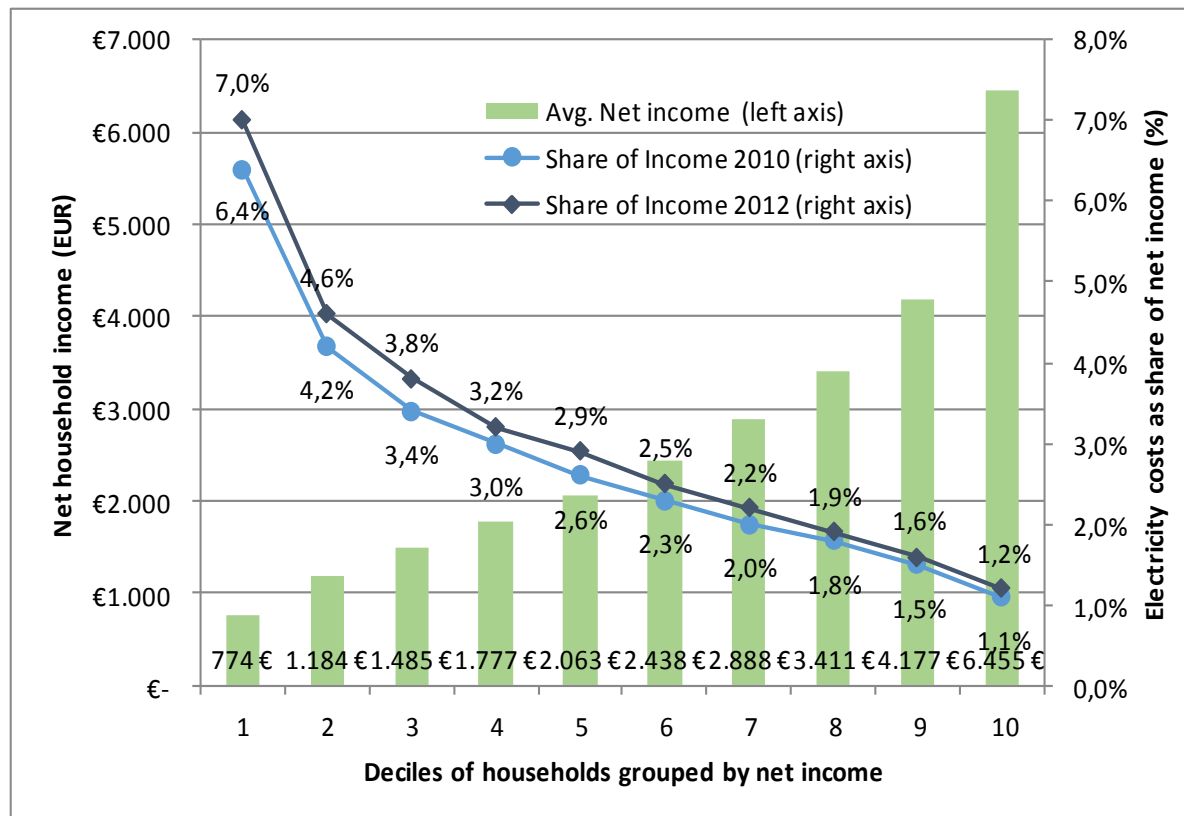
- Project Ideas
- How the “Stromspar-Check” works
- Project development until now
- Results of the project
- Potential for improvement



Assistance programme for low-income households

Situation in Germany:

- Rising income inequality (~4 Mio. households on benefits)
- Energy costs are high burden to low-income households



Assistance programme for low-income households

Project Ideas:

- Low-income households receive free installation of energy- and water-saving devices (e.g. LEDs, CFLs, tap aerators, etc.) + replacement of old refrigerator
- Audit and installation are carried out by unemployed people who are trained as part of the programme
- Job creation by climate protection
- No net additional costs to federal state

Assistance programme for low-income households

The Stromspar-Check Project

- **Pilot Projects** in Freiburg and Berlin in 2008
(Büro Ö-quadrat, Energy Agency Freiburg and Berlin (BEA))
- Start of Stromspar-Check project in December 2008
- Carried out by the German Caritas Association and the German Climate and Energy Agency (eaD)
- Funded by the German Federal Ministry for the Environment (BMUB)



Bundesministerium
für Umwelt, Naturschutz,
Bau und Reaktorsicherheit

How does the Stromspar-Check work?



1

Setting Up Initial Appointment

Initial quires and appointment are made by phone.
Basic information of the households is collected and recorded during the call



2

1st Home Visit

- Inspection of household appliances and consumption
- Review of energy bills (if available)



3

Post-Inspection Review

- Calculation of potential savings
- Reporting and recommendations on further actions



4

2nd Home Visit

- Installation of free energy- and water-saving devices
- Advice on energy- and water-saving behaviour
- If necessary, referral to other service offers (e.g. consumer protection agency)



5

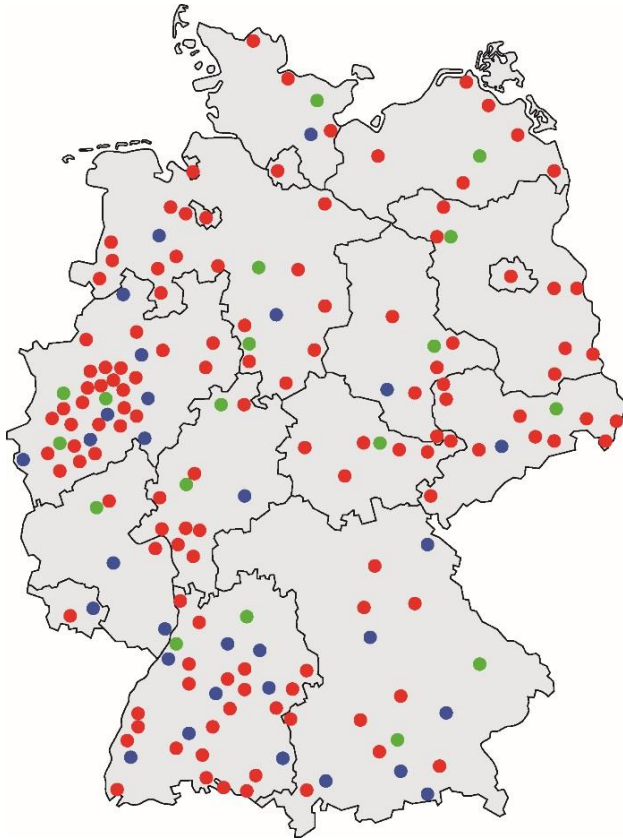
Post-Installation Monitoring

Implementation of a monitoring system (e.g. regular review of energy bills) for evaluation of real savings



Stromspar-Check available in 175 Cities in Germany

- 01.01.2013 = 125 Cities
- 31.12.2013 = 143 Cities
- 07.04.2015 = 175 Cities



Up to April 2015



175,000 audits



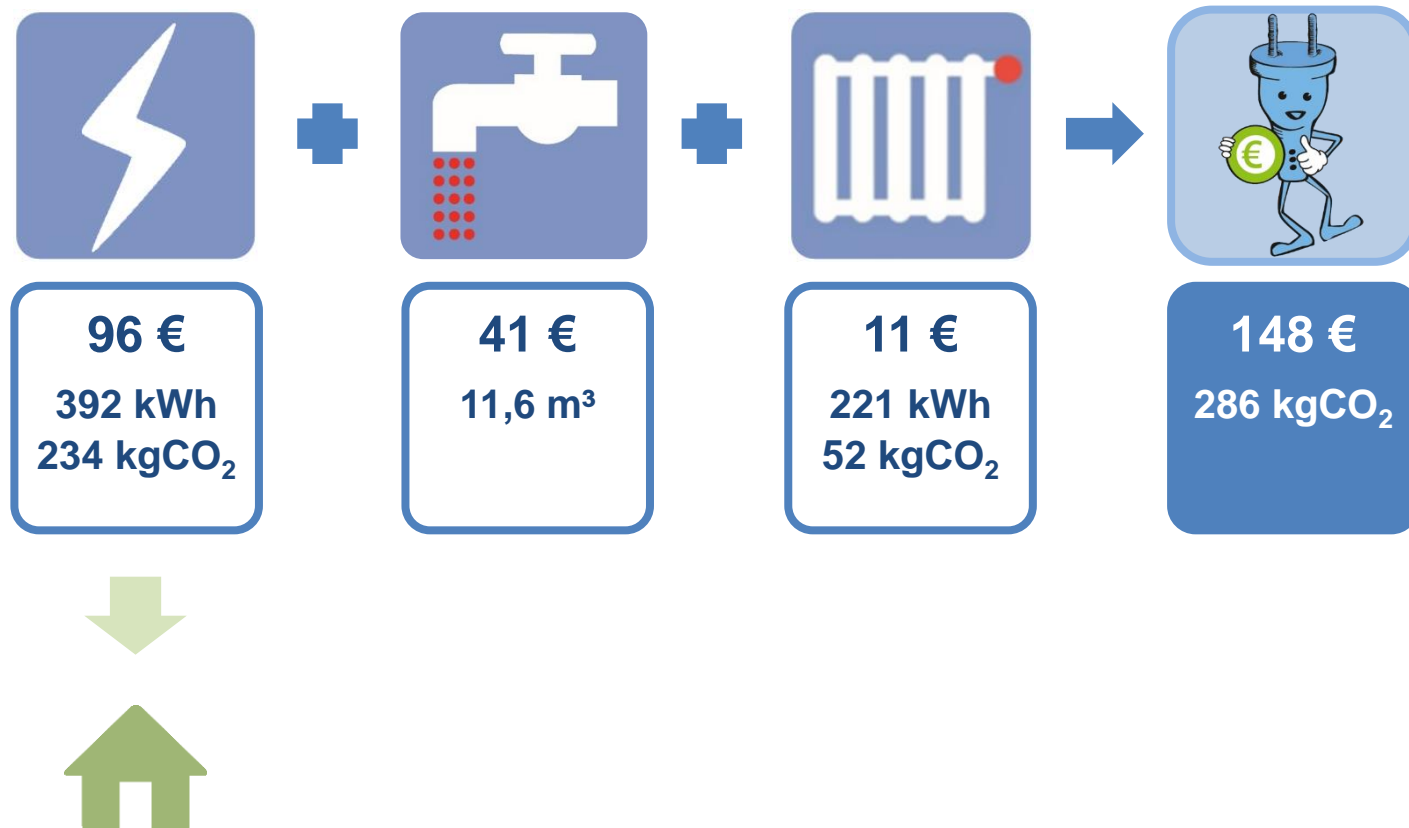
4,600 auditors

Devices installed (December 2008 to November 2014)

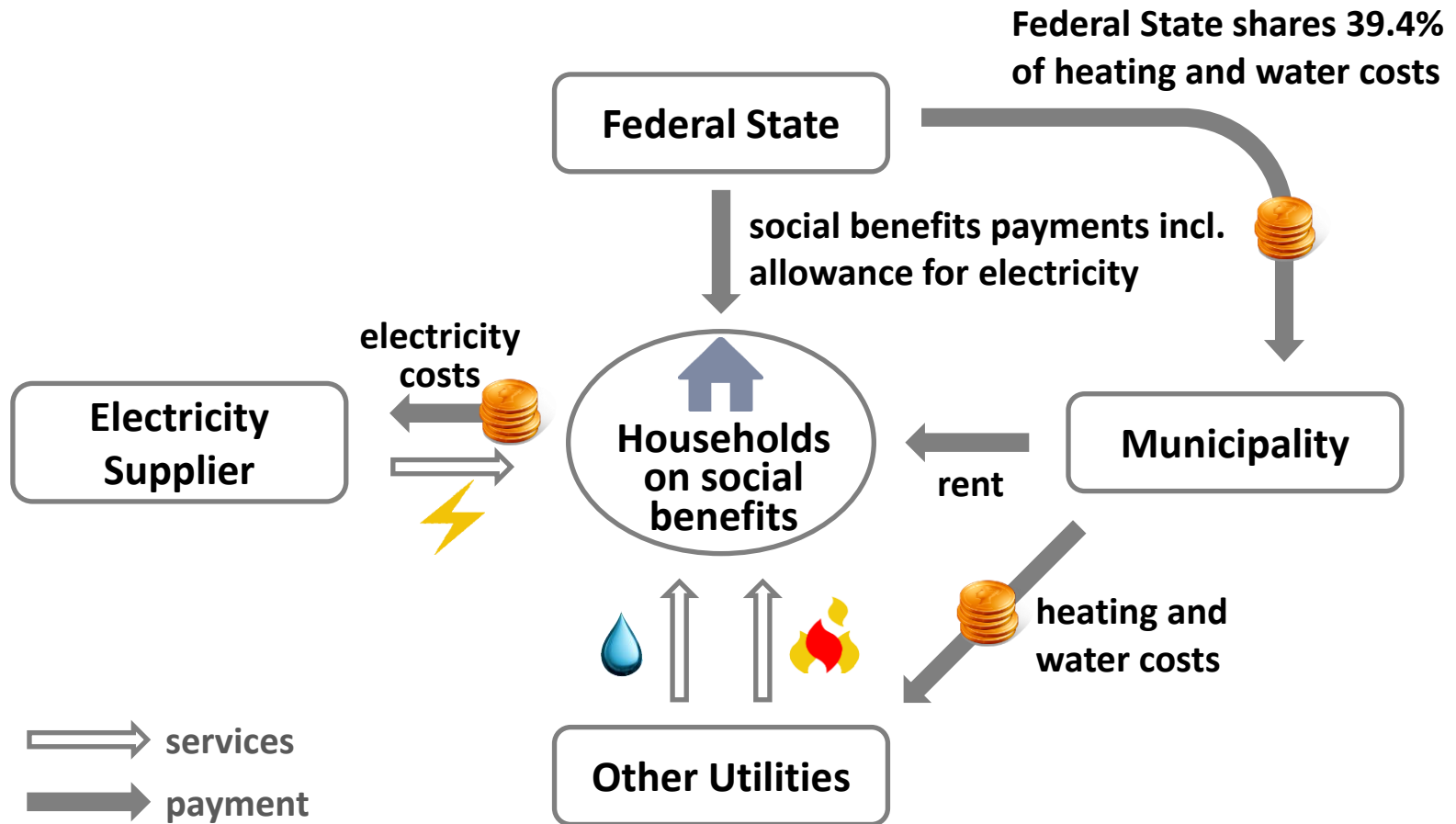
	Number of devices installed	
	Average per household	Total of all households
Compact fluorescent lamps, LEDs	8.66	1,361,483
Switchable power extension leads	1.03	161,964
Tap aerators	0.97	152,409
Water-saving toilet counterweights	0.09	13,468
Water-saving shower heads	0.50	77,982
Flow restrictor	0.12	19,297
Fridge thermometers	0.55	85,971
Hydro- and thermometer	0.04	6,048
Room thermometer	0.02	3,755
Timers and thermostops for hot-water tank	0.04	6,463
Total number of installed devices		1,888,840
Total value of installed devices (Euro)		10,641,390
Value of installed devices per household (Euro/hh)		68



Average annual savings per participating household



German social benefit system for low-income households (ALG II, long-term unemployed, social welfare)



Financial Balance of Stromspar-Check for Federal State

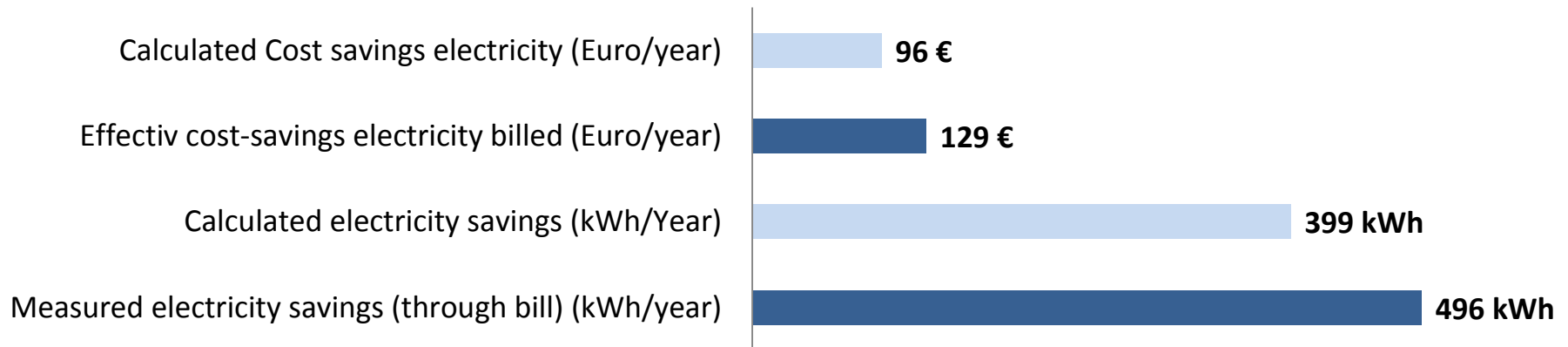
Balance of perspective Federal State	Per Stromspar-Check	
Total costs per check	250	€/check
Savings in water consumption	418	€/check
Savings in space heating and hot water (excl. electricity)	110	€/check
Total savings per check (excl. electricity)	528	€/check
Share of Federal State	39.4	%
Saved expenses for Federal State	208	€/check
CO2 emissions reduction per check	1.9	tCO ₂ /check
Net Balance: Total costs per check	42	€/check
Costs per tonne of CO2 saved	22.6	€/tCO ₂
Savings in electricity consumption	543	€/check

Databank and Monitoring



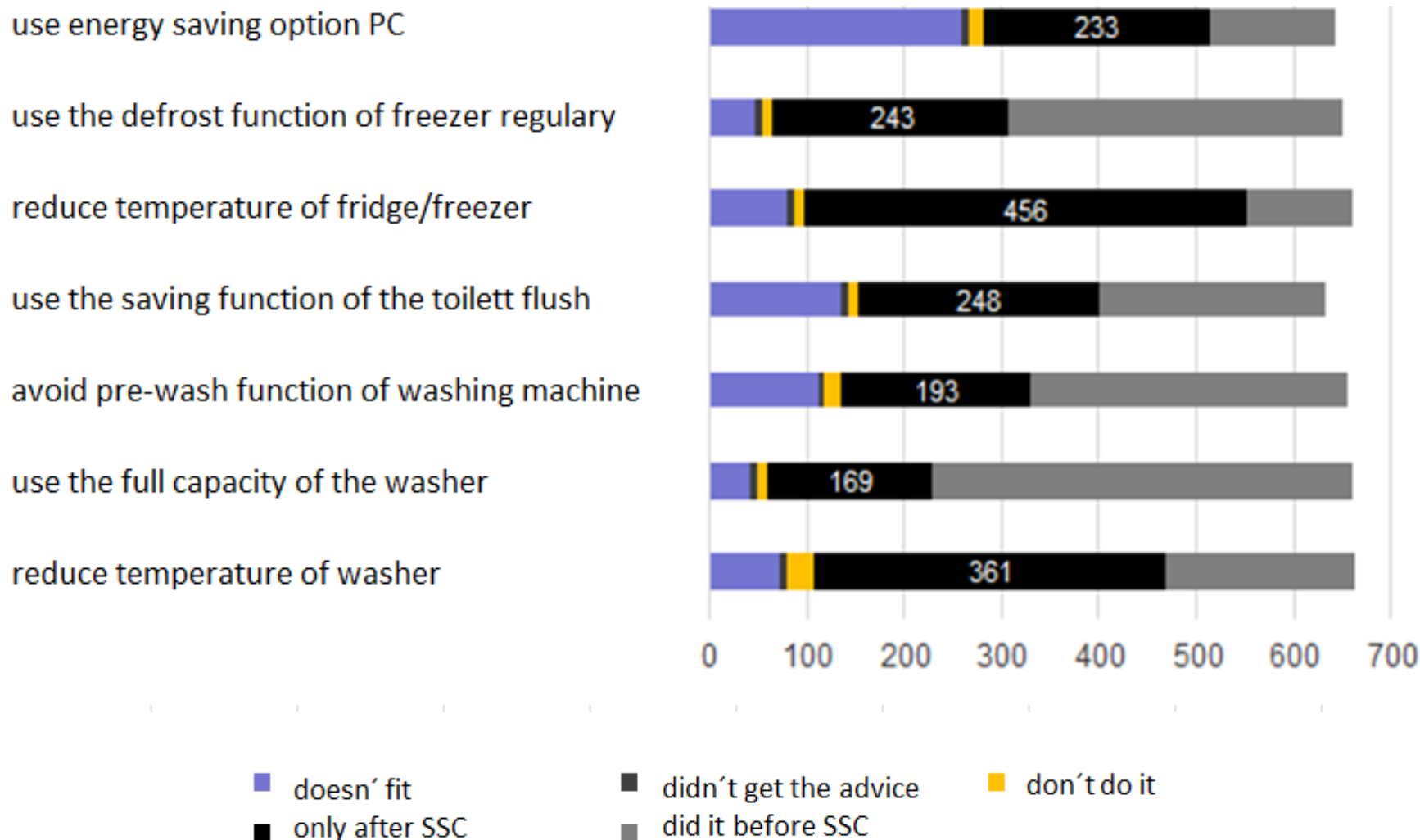
- After each audit a report is provided to the participating household. Every report is checked by an adviser and archived in a central database
- A monitoring system was implemented since 2014. Up to 4/2015, 803 households were controlled for one year

Calculated and measured savings based on monitoring results (803 households)



Direct installation and advice

Results from monitoring system



Potential for Improvement

Current situation in many low-income households:

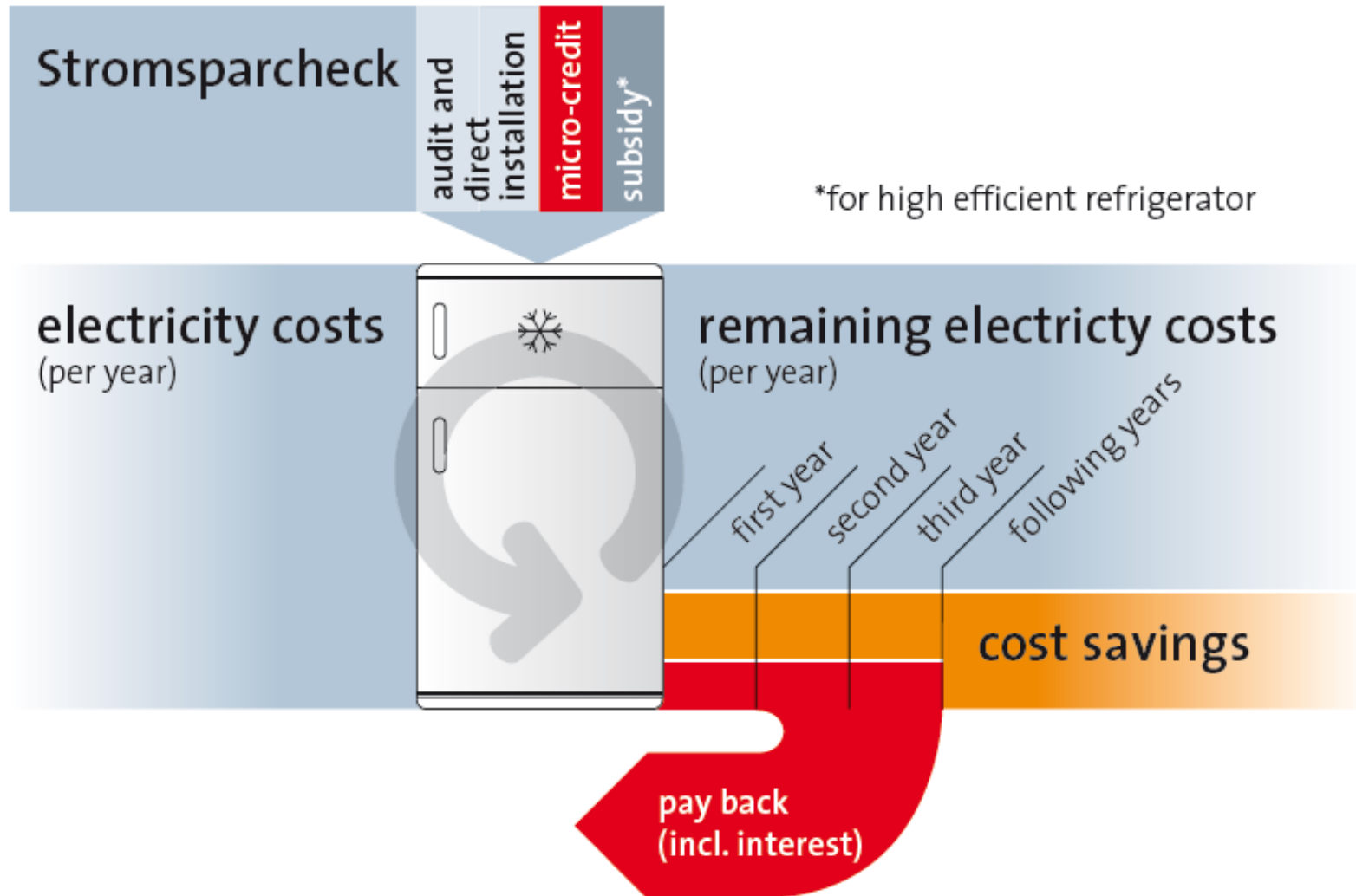
- Old refrigerator and/or freezer
- High electricity consumption as consequence
- Since 2014:
 - Households receive 150 Euro bonus for A++ or A+++ fridge or fridge/freezer
- only 20% of households buy new fridge
- ~80% have no free capital for investment



Solution:

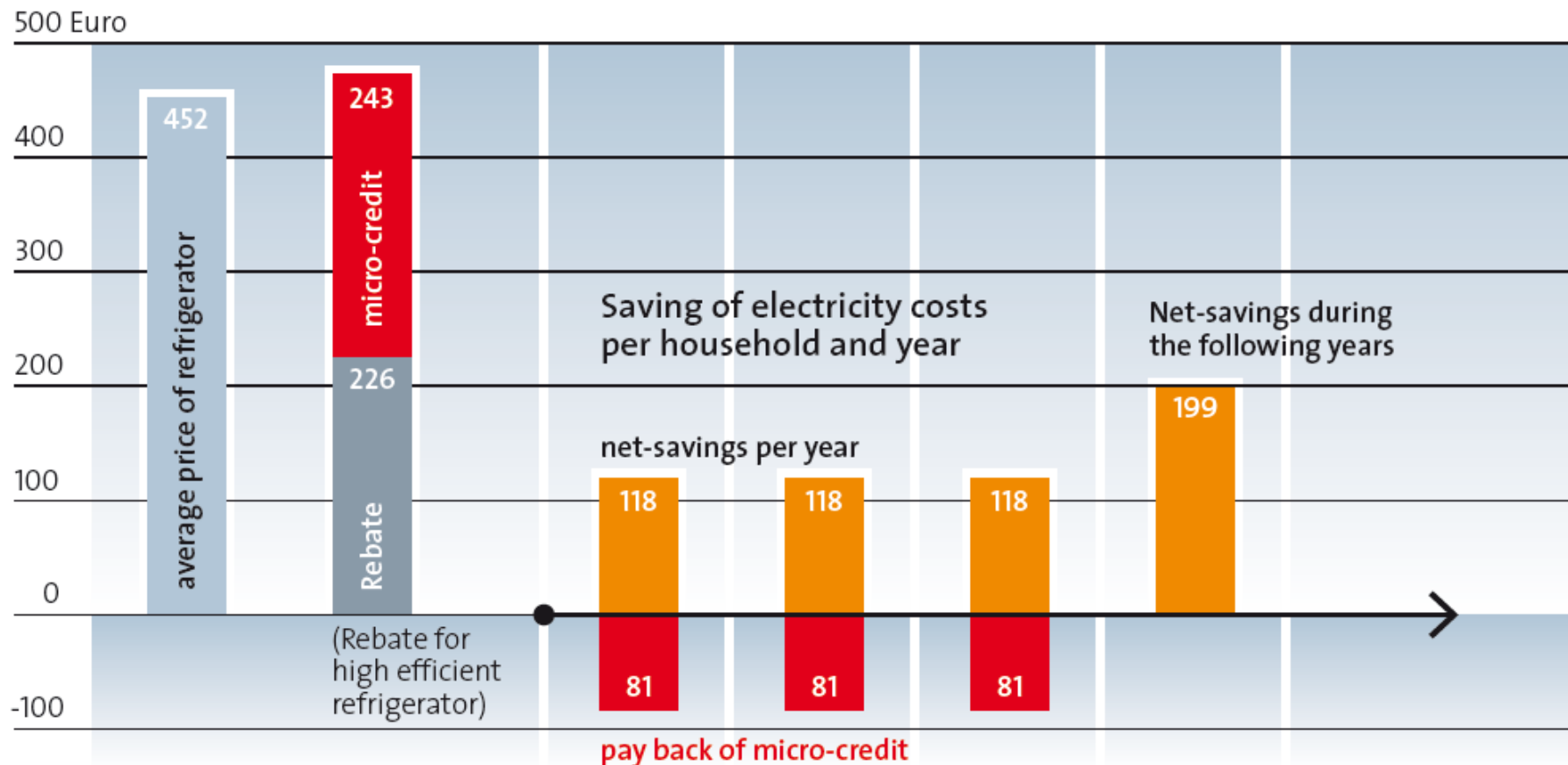
- Micro-credit with a 3-year loan period (2-3% interest)
- Promising results in the **Pilot Project**

Potential for Improvement – Fridge Financing Mechanism



Results with refrigerator replacement (Pilot study 2008)

Stromspar-Check combined with refrigerator exchange program



Suggestions for further improvement

Cost structure of current project:

- about 20% hardware (i.e. energy-/water-saving devices)
- About 80% training, organisation, overhead, monitoring, etc.

Strategy:

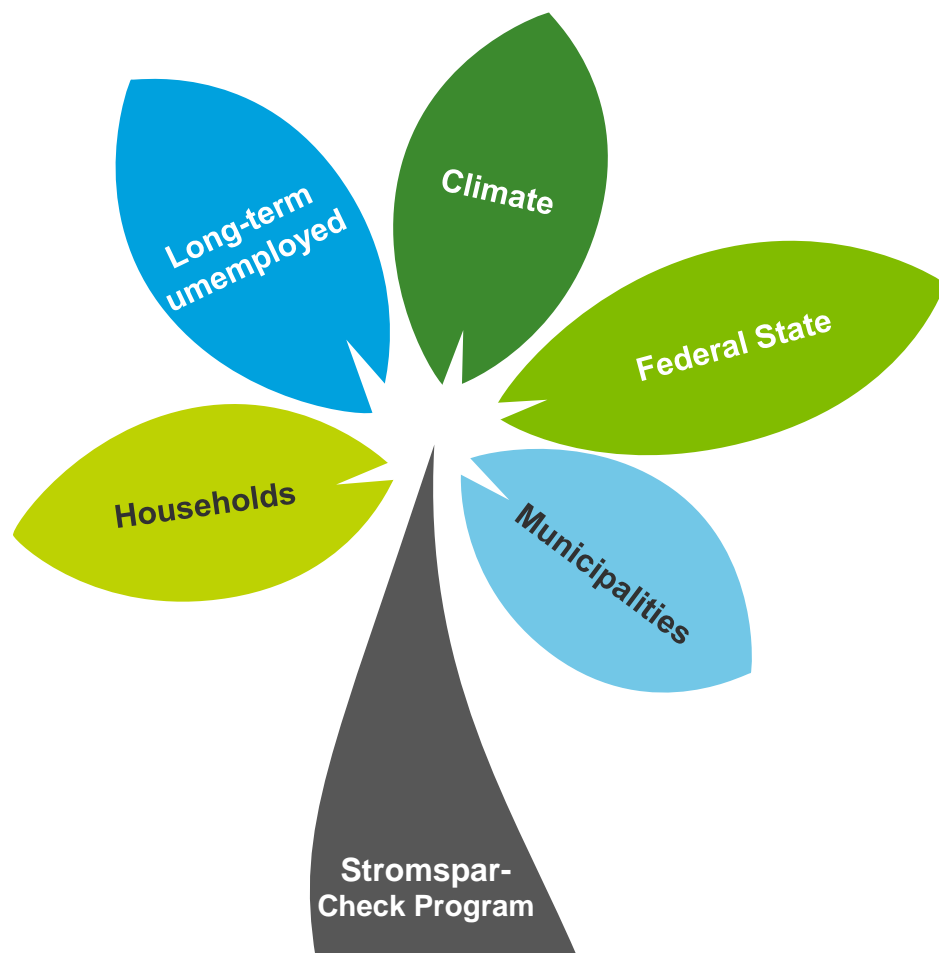
- Exploit all saving potentials identified in household audit
- Include measures for saving heat energy
- Include low income households who do not receive benefits
- building block-wide audits in poor neighbourhoods

Expected results:

- higher energy savings at similar overhead costs → better cost-benefit ratio, higher cost savings for municipality and federal state

Assistance programme for low-income households

Results

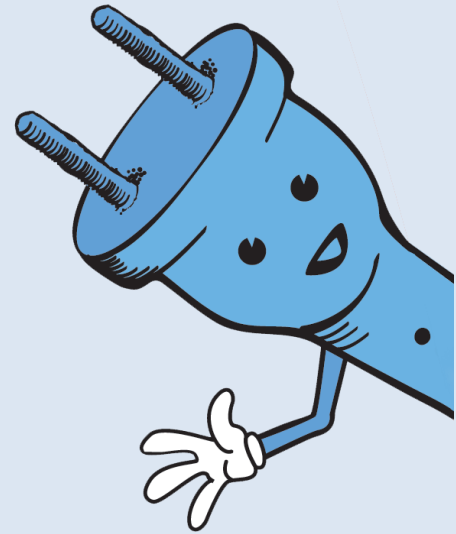


- HOUSEHOLDS**
Low-income households benefit from reduced electricity bills
- LONG-TERM UNEMPLOYED**
About 1000 long-term unemployed people have found their way back into regular employment with the Stromsparcheck
- CLIMATE**
More than 300.000 tCO2 saved over the lifetime of the installed appliances
- FEDERAL STATE**
Cost-savings through lower water- and heating contributions and lower unemployment numbers
- MUNICIPALITIES**
Lower water- and heating costs for households on social benefits

Conclusions

- Cost-effective efficiency program with high social impacts.
- Outreach: More than 1000 newspaper and journal articles have been published to disseminate the results and the advantages of energy efficiency.
- Stromspar-Check was declared to be the “most successful BMU-funded project to support socially disadvantaged consumers” by Dr. Norbert Röttgen, the former German minister for environmental affairs (Bundesumweltminister).

Thank You!
Questions?



More information at www.oe2.de