

# Energy Poverty Measuring, Monitoring, and Identification: Socially Efficient Solutions to Meet Climate Policy Ambitions

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Optimised Measurement, Monitoring, and Identification: National Scale - Statistical Data, Local Scale - Administrative Data, keep Surveys for Experiments

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## Data from statistical office

Low cost of acquiring

Bullet-proof methods of data collection

All regions and big cities

Measuring and monitoring

## Administrative data

Cost of administrative labour

Requires a research partner with good methods

Street level data or 1 x 1 km grid

Measuring, monitoring and identification

## Survey data

High costs (~3.5 EUR per respondent)

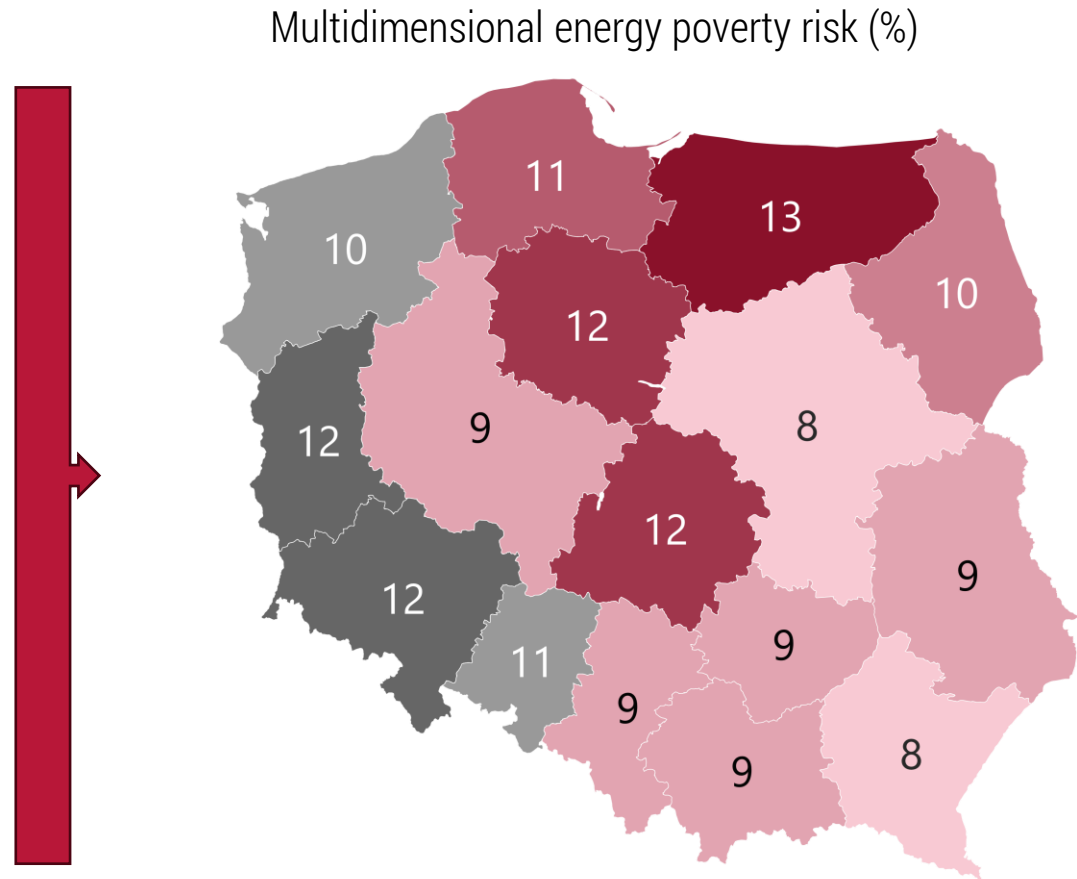
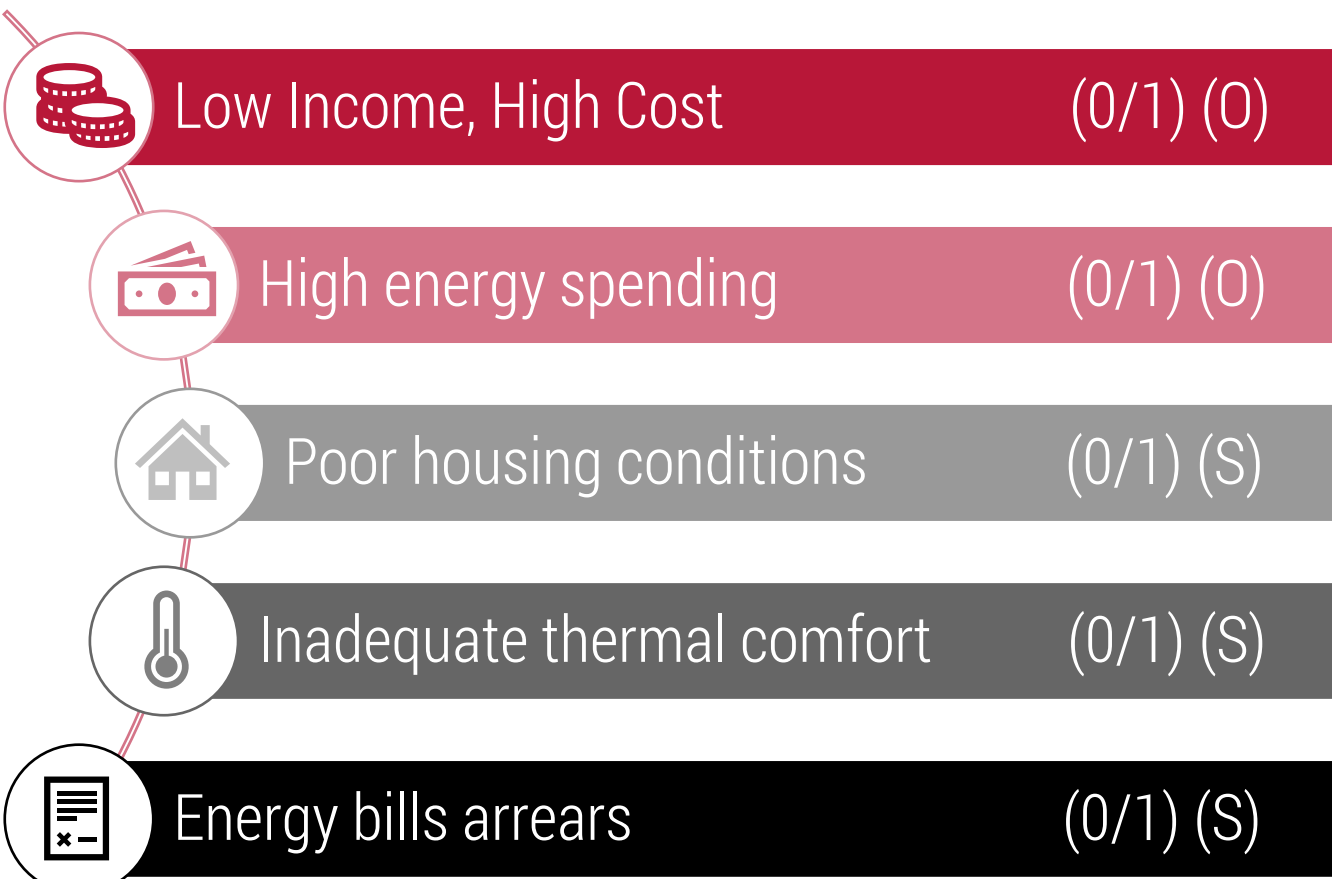
Requires a research partner with good methods

Municipality level

Social preferences

# Based on statistical data: combine multiple indicators to create a single, Multidimensional Energy Poverty Index

1.5 milion (11%) households in energy poverty in Poland in 2021



Source: Sokołowski J., Lewandowski P., Kiełczewska A., Bouzarovski S. (2020) A multidimensional index to measure energy poverty: the Polish case, Energy Sources, Part B: Economics, Planning, and Policy, 15:2, 92-112, DOI: 10.1080/15567249.2020.1742817

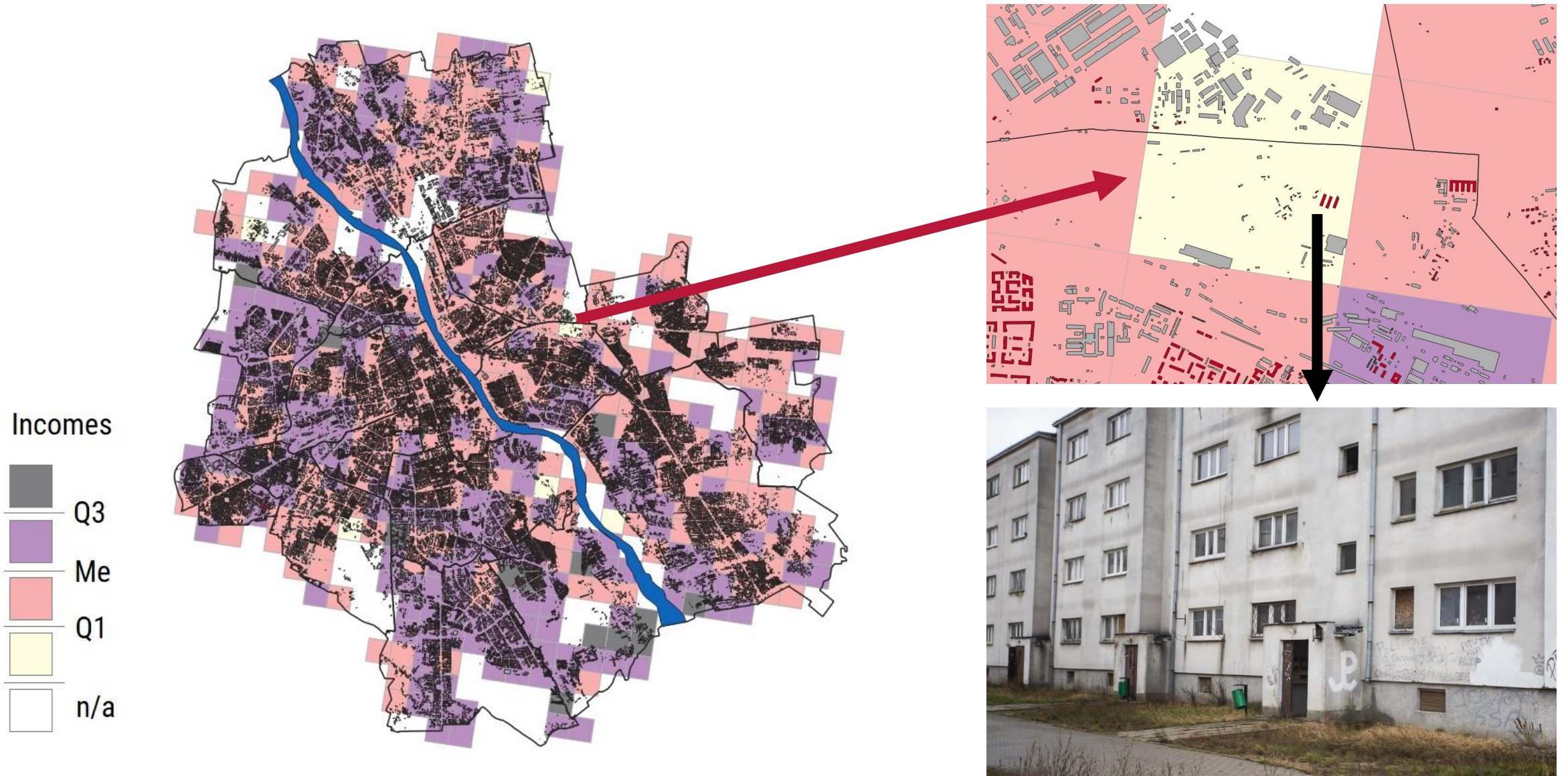
# Based on administrative data: combine multiple indicators to have identification of energy-poor households and prioritise support

The more administrative data you have, the more precise your calculation will be



Source: CARE project (C40 and IBS)

Based on administrative data in Warsaw on incomes, heating sources and buildings we map areas where interventions bring the most social and environmental benefits



# Use surveys to run experiments. From the respondents' choices you can learn what is their preferred policy solution for ETS-2 and Social Climate Fund

We simulate behaviour scenarios and analyse their effects.










GOALS OF ETS-2

10281 people made mutually exclusive choices regarding:

- climate and environment,
- energy security,
- income gains and losses.

WAYS TO ACHIEVE IT

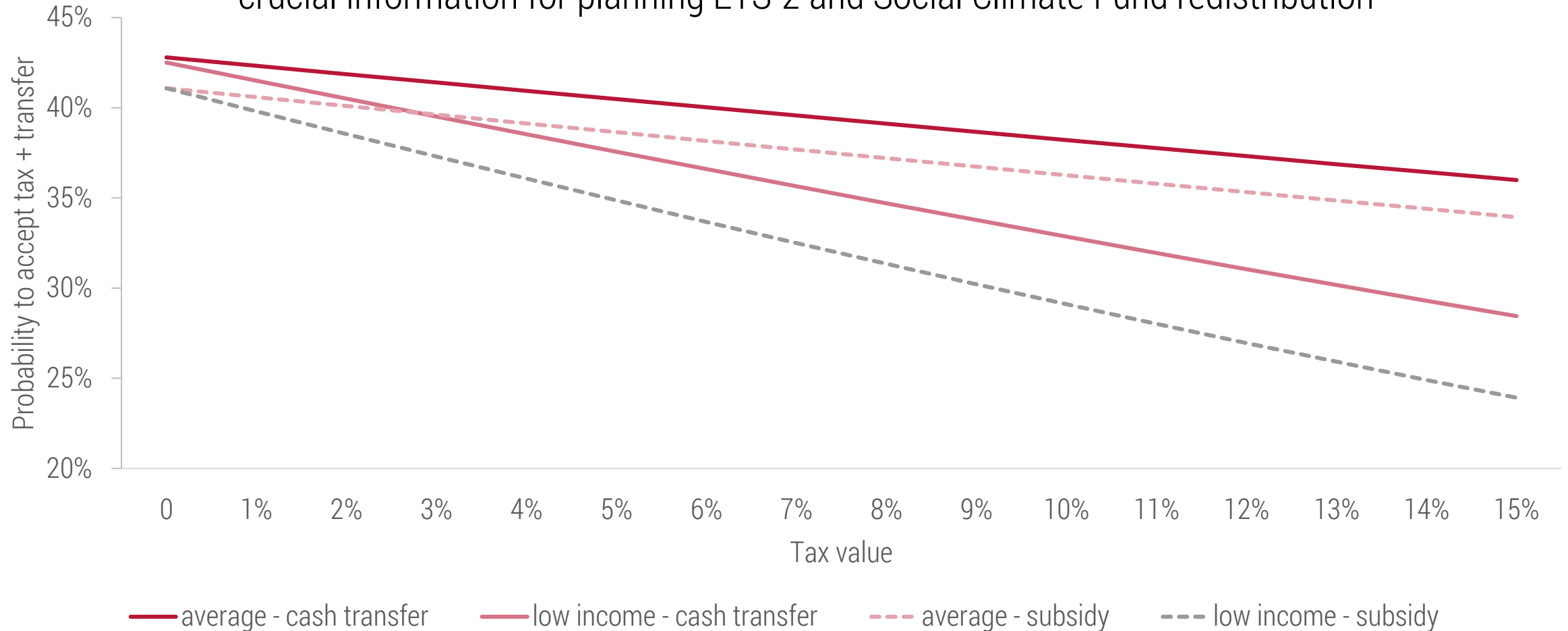
IMPACT ON BUDGETS

	1	2
Climate change impacts	<b>Major</b>  A major decline in crops, a significant threat to life due to catastrophic heat, floods and droughts	<b>Minimal</b>  No changes in crops, low risk to life from catastrophic heat, floods and droughts
Diseases caused by poor air quality	<b>Limited to minimum</b>  less than 5,000 deaths annually	<b>No change</b>  50,000 deaths annually
Purchases of Russian fuels	<b>Limited to zero</b> 	<b>Limited by half</b>  imports of 5 billion m <sup>3</sup> of gas and 16 million tons of oil annually
Access to electricity and individual transport	<b>No change</b> 	<b>Energy rationing</b>  no electricity every day for 1 hour and all Sundays of the year without a car
Policy options	<b>No change</b>	<b>Carbon tax and full investment subsidy</b>  Tax on coal, gas and oil consumption at home and one-off, full co-financing of a heat pump, photovoltaic panels, insulation of a building or an electric car from the state budget
Net monthly income of your household	5500	6160
Monthly benefit/loss for your household	0	+660

## Based on survey experiments, look for socially efficient solutions: run experiments to learn the preferences of people in need of support



We know an optimum amount of money and preferred support form to lower the aversion to carbon tax – crucial information for planning ETS-2 and Social Climate Fund redistribution



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