



# Challenges of defining, measuring and addressing energy and transport poverty and vulnerability

Nelly Unger, Dr. Katja Schumacher, Öko-Institut | 7th December 2023

Ariadne Project Workshop "Targeted social compensation and identification of vulnerability: What is next for science to support policy?"

# Definitions of energy poverty and vulnerability in EU documents

- **Energy Poverty** is defined and referred to in different EU documents

- Energy Poverty Recommendation (2020 and 2023): “Energy poverty is a situation in which households are unable to **access essential energy services**”. Development of criteria is left to MS according to national context. Provides recommendations on indicators to measure energy poverty.
- Energy Efficiency Directive (2023): Article 2: ‘Energy poverty’ means a household’s lack of **access to essential energy services** that underpin a decent standard of living and health, including adequate warmth, cooling, lighting, and energy to power appliances, in the relevant national context, existing social policy and other relevant policies.
- Also: Governance Regulation (2018), recast Electricity Directive (2019) ...

- **In the Social Climate Fund Regulation (2023) both energy poverty and vulnerability are defined**

- ‘**energy poverty**’ means a household’s lack of **access to essential energy services** that underpin a *decent standard of living and health, including adequate warmth, cooling, lighting, and energy to power appliances*, in the relevant national context, existing social policy and other relevant policies;
- ‘**vulnerable households**’ means households in energy poverty or households, including *low income and lower middle-income* ones, that are significantly affected by the *price impacts* of the inclusion of buildings into the scope of Directive 2003/87/EC and *lack the means* to renovate the building they occupy;

# Measuring energy/transport poverty and vulnerability

## What do we need the indicator for?



**How many households are affected?**

Defining the scope of the issue, identifying the need for funding, starting point for defining **who** is affected



**How much money do we need?**

Linked to SCF, defining the need for targeted support, scope of funds needed for effective policy



**How do households prove their eligibility?**

Question of practicalities, policy design and implementation

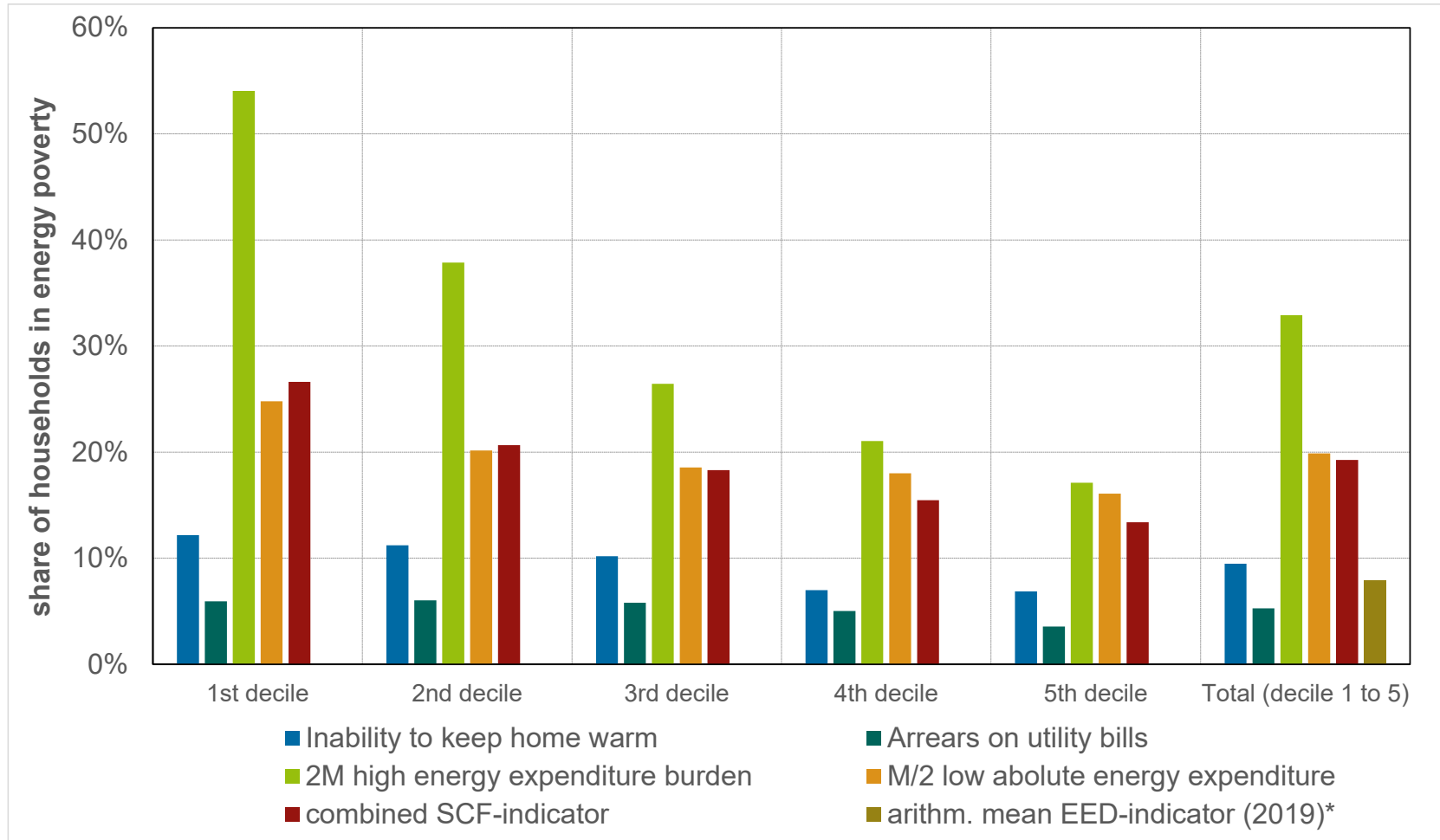
# Measuring energy poverty and vulnerability

## Standard and specific indicators

- There are different kinds of energy poverty indicators out there that differ in complexity and data requirements
  - Multiple single indicators (being used at EU-level) as outlined in Energy Poverty Recommendation and Energy Poverty Advisory Hub
    - 2x expenditure-based and 2x self-reported indicators
  - Definition in EED and “default” indicator as arithmetic mean of four indicators from Energy Poverty Recommendation
  - Compound indicator suggested by us in German study: high energy exp. burden, high energy use per sqm, low income
  
- Applicability often dictated by data availability

# Energy poverty indicators

## Results for Germany - 2022



\* Indicator is share of all households, not just 1st to 5th income decile

Expenditure based indicators are generally higher

### Combined SCF-indicator:

Intersection of

- High energy exp. burden (2M)
- High energy use per sqm
- Low income (decile 1 to 5)

### EED-indicator:

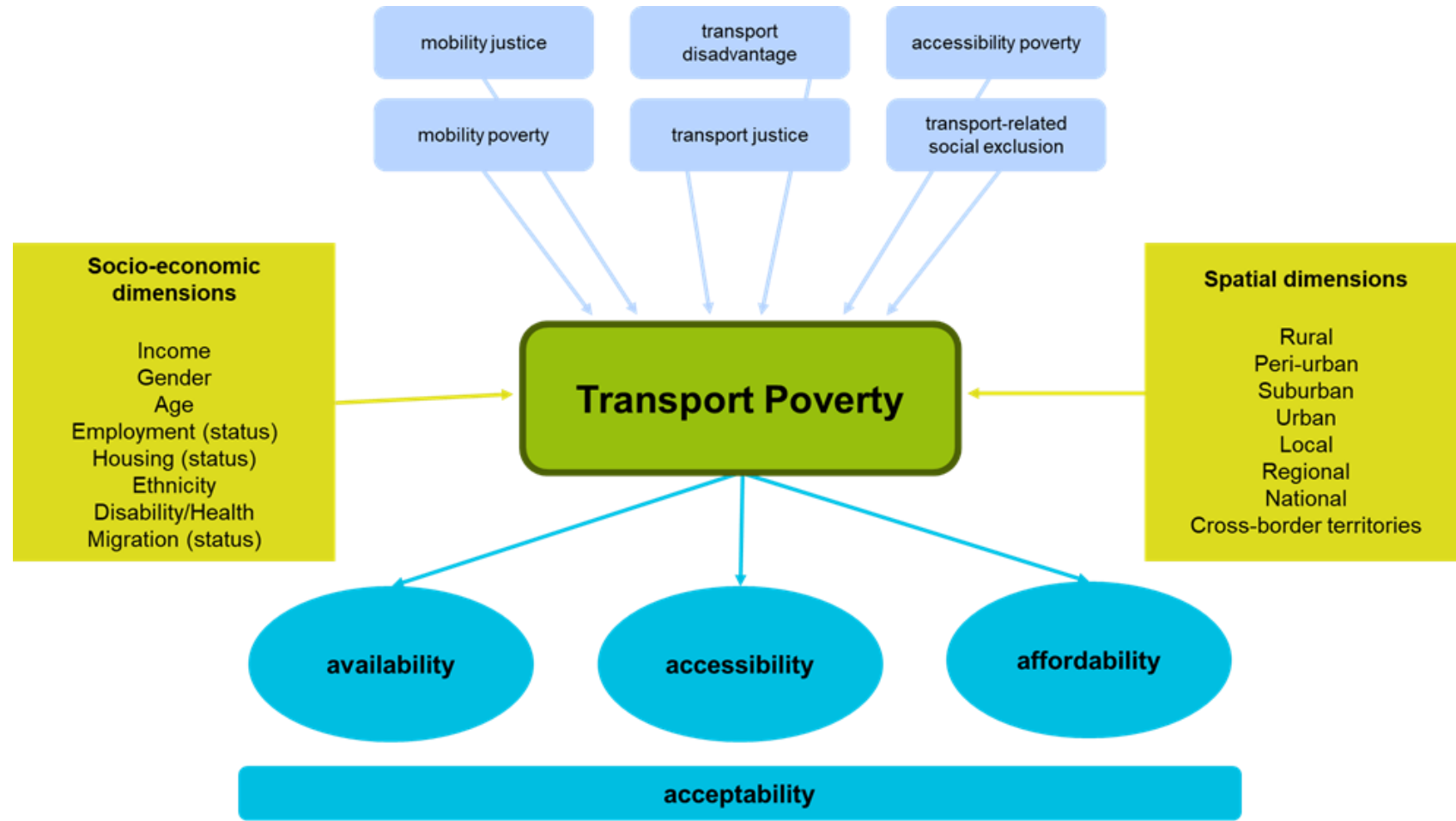
Arith. mean of i) inability to keep home warm, ii) arrears, iii) living with leaking roof, damp walls etc., iv) at risk of poverty

=> In total for lower 5 income deciles: range from less than 2 to about 7 million households

Total: 40 million HH in DE

Ongoing project for DG EMPL „Transport poverty: Definitions, indicators, determinants, and mitigation strategies”

## Conceptualisation of Transport Poverty



# Measuring transport poverty and vulnerability

## Transport poverty indicators

- Search for indicators even more challenging than for energy poverty. Indicators need to be able to measure the three A's of (i) Availability (ii) Accessibility and (iii) Affordability and ideally take into account cross-cutting issues, such as those related to safety and comfort
- In the literature, two broad types of indicators / data sources used
  - Spatial data and indicators, e.g. in the UK, USA, Canada
  - Indicators based on survey data, e.g. EU-27
- Energy poverty indicators can be used as an inspiration, but mostly apply to questions of affordability

# Ongoing project for DG EMPL: Selection of indicators based on EU household survey data to be used in a transport poverty scoreboard

Availability		Accessibility		Affordability	
Data set	Indicator	Data set	Indicator	Data set	Indicator
EU-SILC ad hoc module 2013-14	Public transport stop too far away	EU-SILC ad hoc module (2013)	Satisfaction with commuting time	HBS 2015	2M: Expenditure on transport higher than twice the national median
EU-SILC ad hoc module 2007,12	Access to public transport with great difficulty (and with some difficulty)	Eurostat LFS ad hoc module (2019)	Daily commute to work longer than acceptable or average	HBS 2015	6% Threshold: Household spends more than 6% of income on transport
Eurobarometer 495 (2019)	Biggest challenge 'Availability and connectivity'	Eurofound EWCS (2021)	Daily commute to work longer than acceptable or average	EU-SILC 2022	Forced car ownership according to Mattioli et al. (2017)
Eurobarometer 495 (2019)	Forced car ownership Indicator captures people naming 'car' as main mode of transport and stating 'There is no alternative' as the reason			EU-SILC ad hoc module 2013-14	Public transport too expensive
Eurofound EQLS (2016)	Access to public transport 'very difficult' and 'very or rather difficult'			Eurobarometer 495 (2019)	Cost of public transport is a challenge



## Next steps for Member States in defining, monitoring and targeting vulnerable groups

- Since vulnerability is **context and country specific**, it is up to the Member States to decide on the most suitable definition and indicators. Some Member States already monitor the issue and report as part of the **NECPs**.
- **Traditional energy poverty indicators can be a good starting point**, but it is important to check how they can be used in targeting the measures to be financed by the SCF. **Transport poverty indicators are still in their infancy** (good practice: UK)
- Although limitations exist, **national and local data** are likely to be more rich and detailed than EU-level data. In addition, **new data** can be gathered.
- Indicators are needed to **design policy measures**, but also to understand **who is affected** and **how much funding is needed** for targeting both **direct income support** and **green investments** for vulnerable groups.

Thank you for your kind attention!

## Your contacts

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### **Dr. Katja Schumacher**

Deputy Department Head  
Energy & Climate

### **Oeko-Institut e.V.**

Office Berlin  
mail: [k.schumacher@oeko.de](mailto:k.schumacher@oeko.de)

### **Nelly Unger**

Researcher

### **Oeko-Institut e.V.**

Office Berlin  
mail: [n.unger@oeko.de](mailto:n.unger@oeko.de)