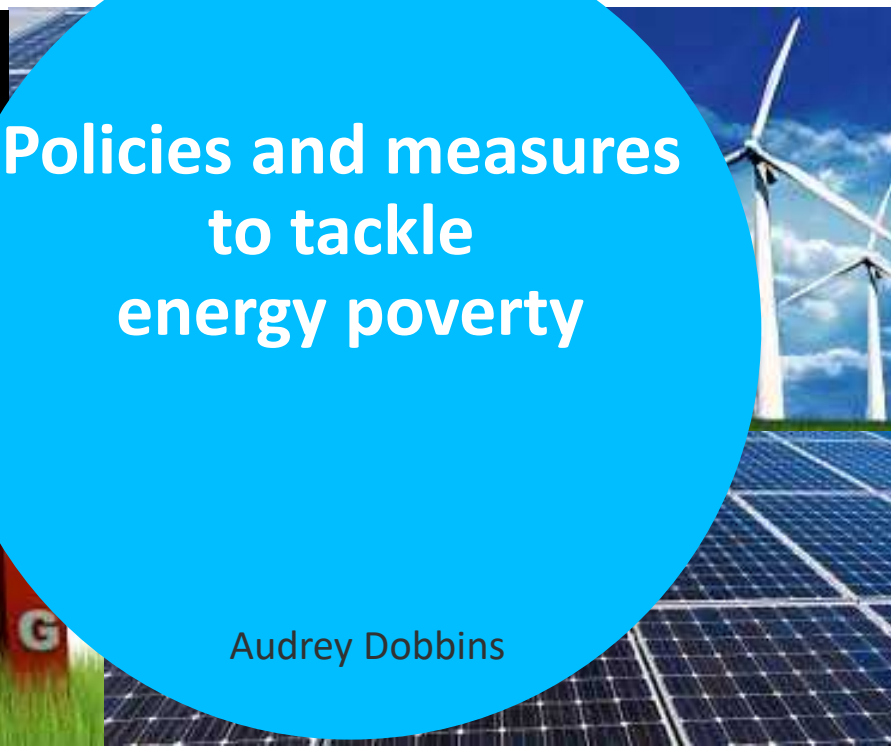
University of Stuttgart
IER Institute of Energy Economics
and Rational Energy Use

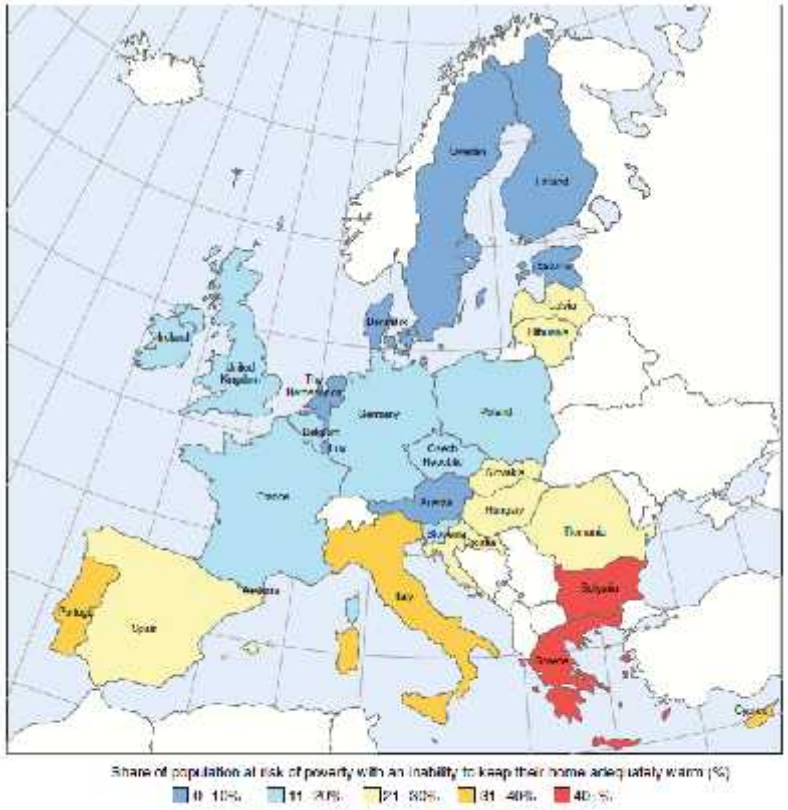


Policies and measures to tackle energy poverty

Audrey Dobbins

Estimates of energy poverty in Europe

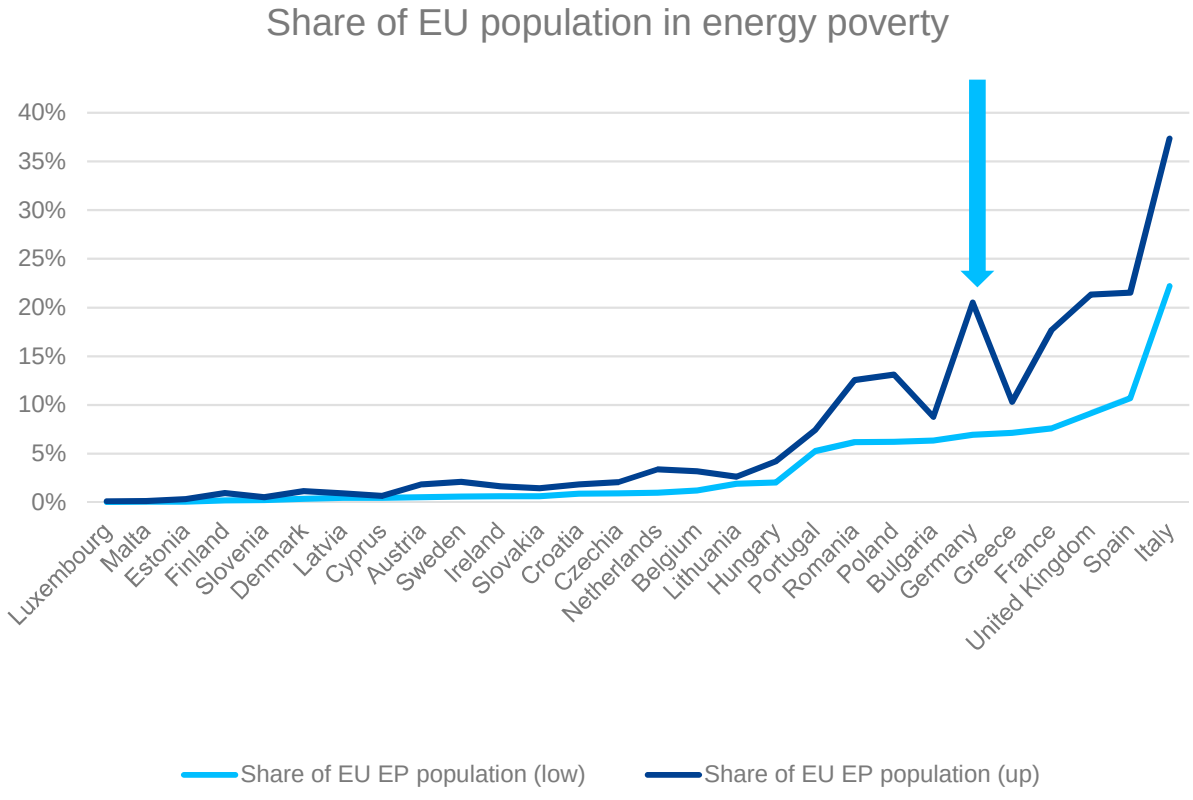
- Approx. 50 million people in energy poverty



Source: Dobbins et al, 2019. Nature Energy Vol. 4, Issue 1

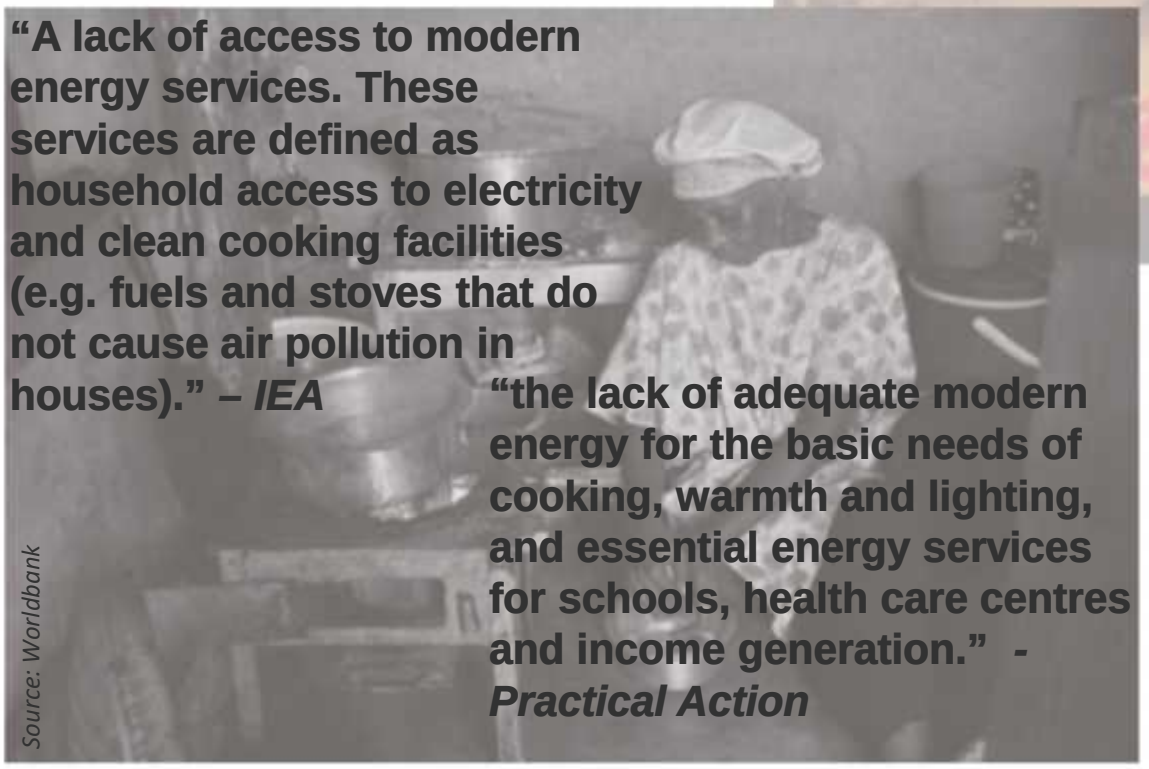
Fig. 1 | Vulnerability to energy poverty across EU member states in 2016. The map shows the percentage of the population in each member state who are at risk of poverty with an inability to keep their home adequately warm[12].

- Energy poverty proxy indicators – share of population unable to keep comfortably warm in winter



Introduction: What is energy poverty?

The income point below which energy use and or expenditures remains the same, implying this is the bare minimum energy needs. – *UNDP*



"A lack of access to modern energy services. These services are defined as household access to electricity and clean cooking facilities (e.g. fuels and stoves that do not cause air pollution in houses)." – *IEA*

"the lack of adequate modern energy for the basic needs of cooking, warmth and lighting, and essential energy services for schools, health care centres and income generation." - *Practical Action*

Source: Worldbank

Energy poverty is defined as a condition when average monthly household expenditures for the consumption of electricity, gas and heat, represent a significant share of the average monthly household income. -*Slovakia*

A household to be fuel poor if (i) their income is below the poverty line (taking into account energy costs); and (ii) their energy costs are higher than is Low income, high consumption (LIHC). Two criteria include (i) fuel costs are above the median level, and (ii) residual income net of fuel 14 typical for their household type. *-UK*

Source: Buzar 2007

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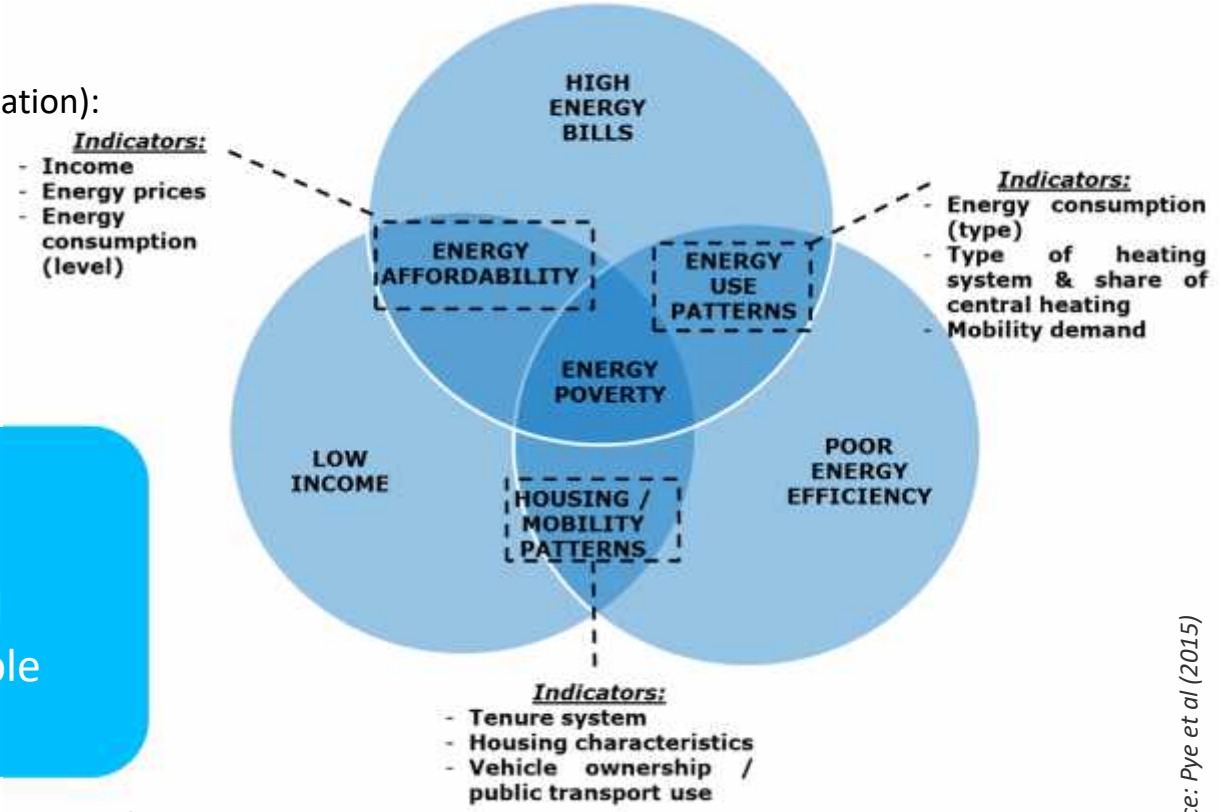
[illegible] households are those for whom income is below the poverty line (taking into account energy costs); and (ii) their energy costs are higher than is Low income, high consumption (LIHC). Two criteria include (i) fuel costs are above the median level, and (ii) residual income net of fuel 14 typical for their household type. -*UK*

- *Access to modern energy services*
- *Ability to afford to meet basic needs*

Understanding energy poverty in Europe: drivers

- 3 key drivers of energy poverty (in isolation or combination):
  - low income,
  - high energy bills,
  - poor energy efficiency



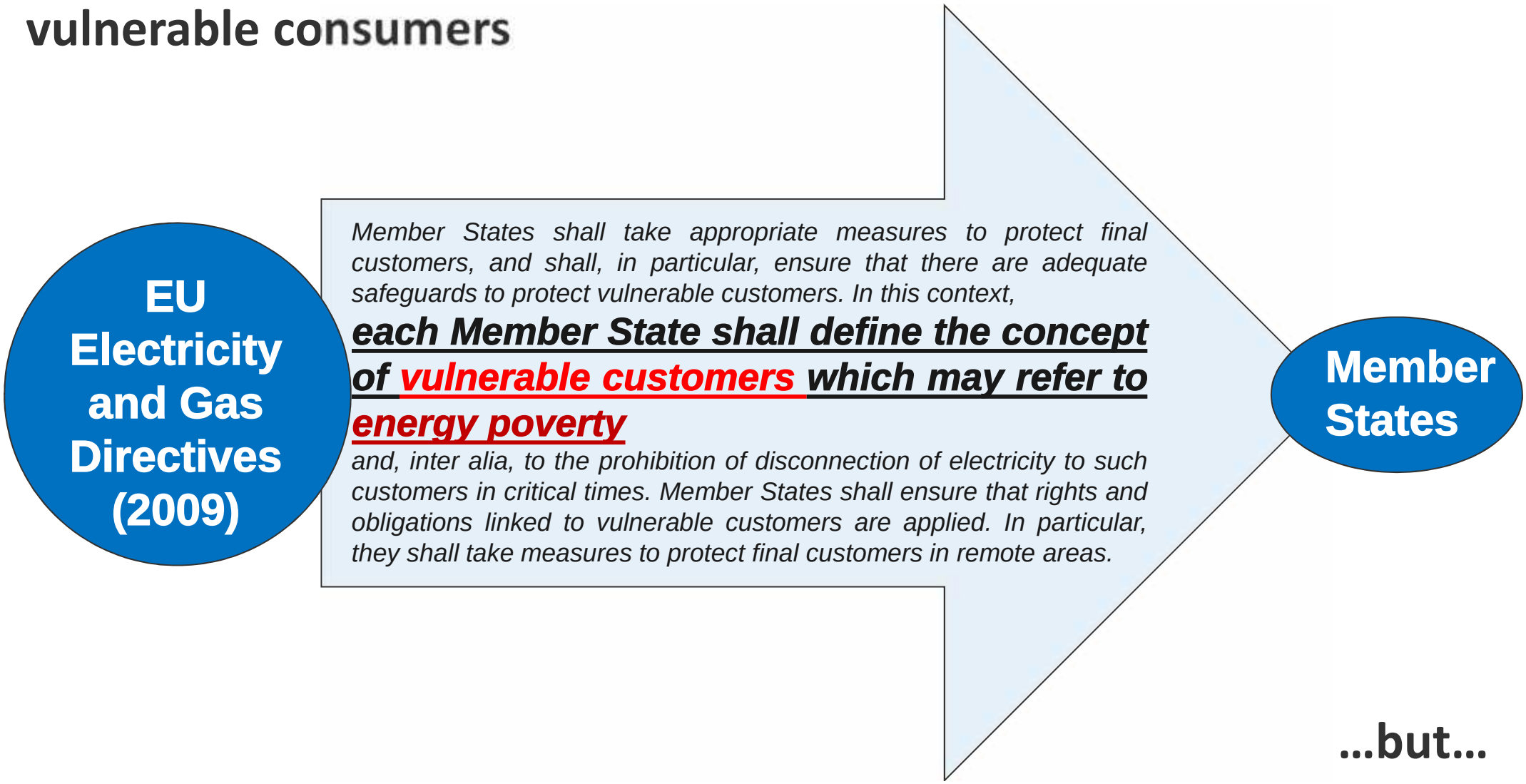
Source: Pye et al (2015)

Commonly defined as a situation where individuals or households are unable to adequately heat or provide other essential energy services ***(e.g. mobility!)*** at affordable cost.

- Definition -> scope of the problem – identifies action areas and what is to be measured (indicator development)
- -> despite general consensus on the causes, there is no consensus on the definition

BUT, what is meant by "adequate" and "affordable"?

European policy recognising energy poverty in combination with vulnerable consumers



...but...

Review of definitions used across Member States

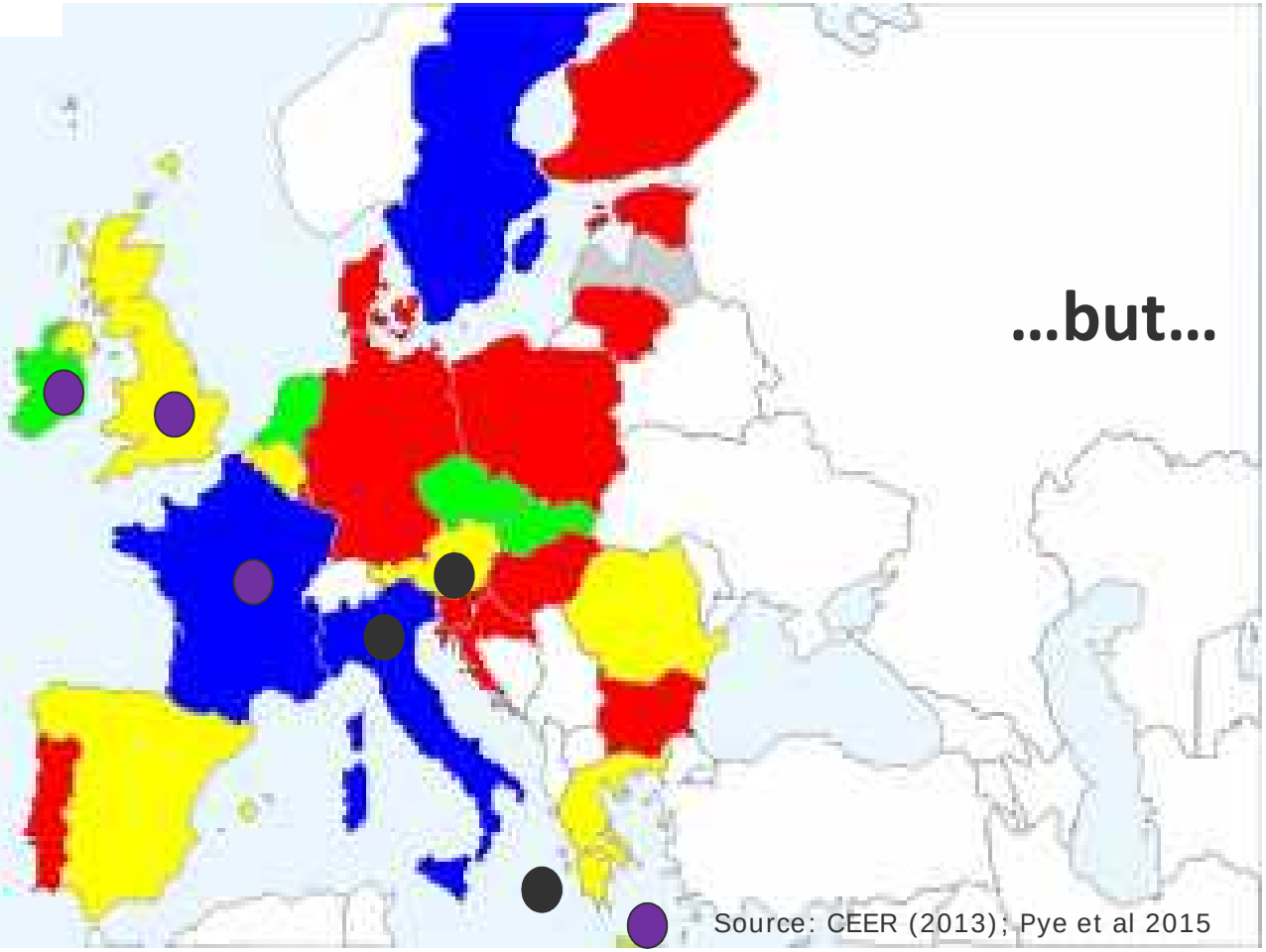
…lack of guidance…

Vulnerable Consumers

Definition type	
Receipt of social welfare	
Range of socio-economic groups (e.g., age, income, health)	
Energy affordability (low income / high expenditure)	
Disability / health	
Not available / Under discussion	

Energy poverty

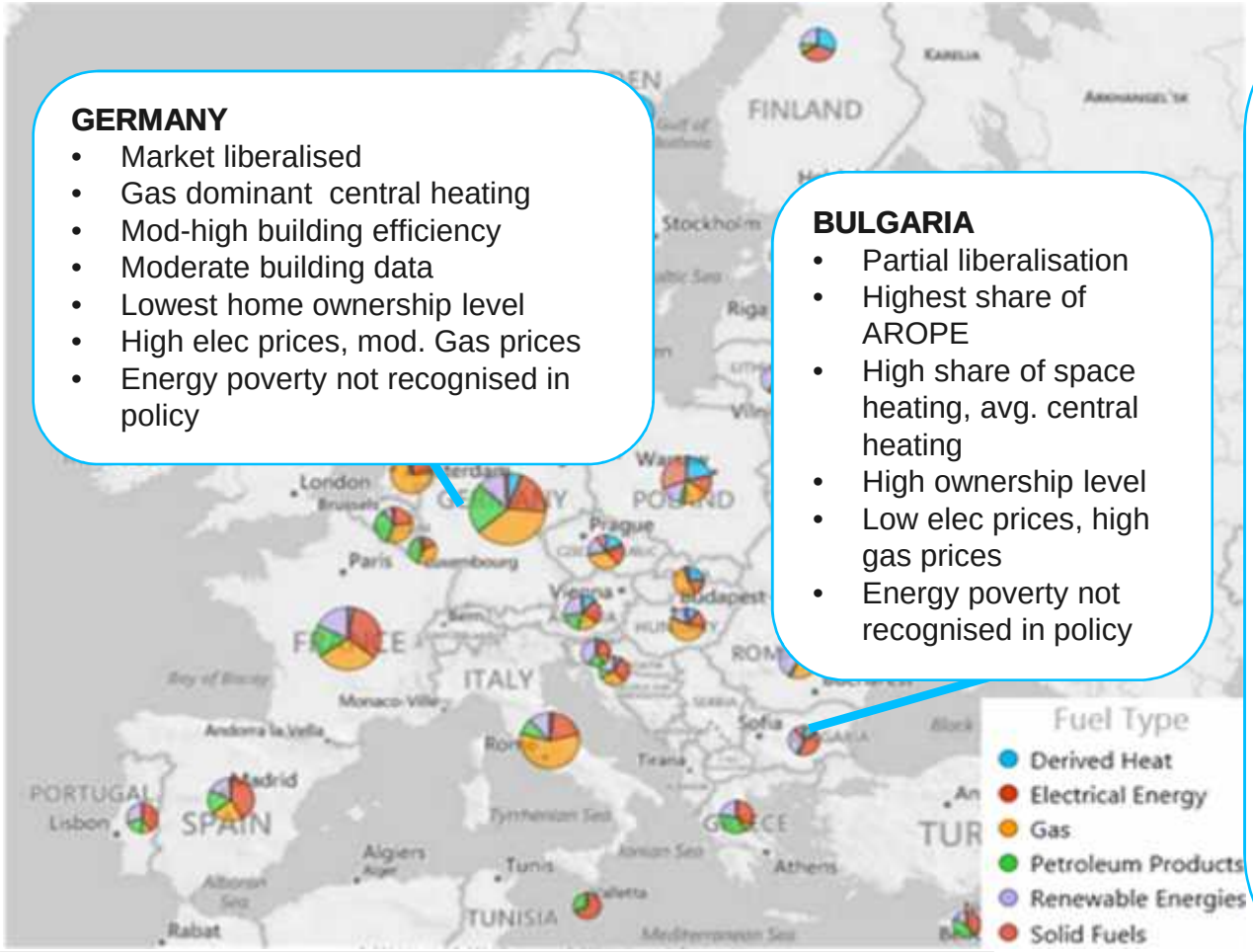
Official definition	Definitions under consideration…
Ireland, France, UK, Cyprus, Slovakia	Austria, Italy, Malta



…but…

Source: CEER (2013); Pye et al 2015

National/local context a strong driver of policy implementation



GERMANY

- Market liberalised
- Gas dominant central heating
- Mod-high building efficiency
- Moderate building data
- Lowest home ownership level
- High elec prices, mod. Gas prices
- Energy poverty not recognised in policy

BULGARIA

- Partial liberalisation
- Highest share of AROPE
- High share of space heating, avg. central heating
- High ownership level
- Low elec prices, high gas prices
- Energy poverty not recognised in policy

Final energy consumption, based on Eurostat

Differences across following metrics impact on nature of problems, and potential solutions

- Climate.
- Energy supply and use.
- Housing condition, type and tenure.
- State of market liberalisation.
- Energy prices.
- Household income & % households at risk of poverty.

Due to all these differences, the definition should not include a metric because "affordable" and "adequate" will have different dimensions

What is a vulnerable consumer? What is energy poverty? What's the difference? Why does it matter?

	Vulnerable consumers	Energy poverty
Concept	Includes individuals in energy poverty and those at risk, but also a broader group of specific consumers such as recipients of social welfare or those with disability and/or health issues who may be at a disadvantage in the purchasing and use of energy	Commonly understood to describe a situation where individuals or households are not able to adequately heat or purchase other energy services at an affordable price
Energy sources	Focus on electricity and gas, based on legislative requirements (for example, internal energy market directives)	All household energy sources, possibly including for mobility
Timeframe	Shorter-term curative focus on consumer protection and continued access to gas and electricity	Longer-term focus on prevention and addressing the underlying causes, such as poor building efficiency, low incomes and high energy costs
Target group(s)	Specific disadvantaged groups, such as those that receive social welfare or have health and/or disability issues	Lower income households facing energy affordability issues
Implementing agent	Typically the regulator or consumer protection agencies, utilities and government	A broader range of stakeholders such as government, consumer groups and non-governmental organizations, not just regulators and utilities

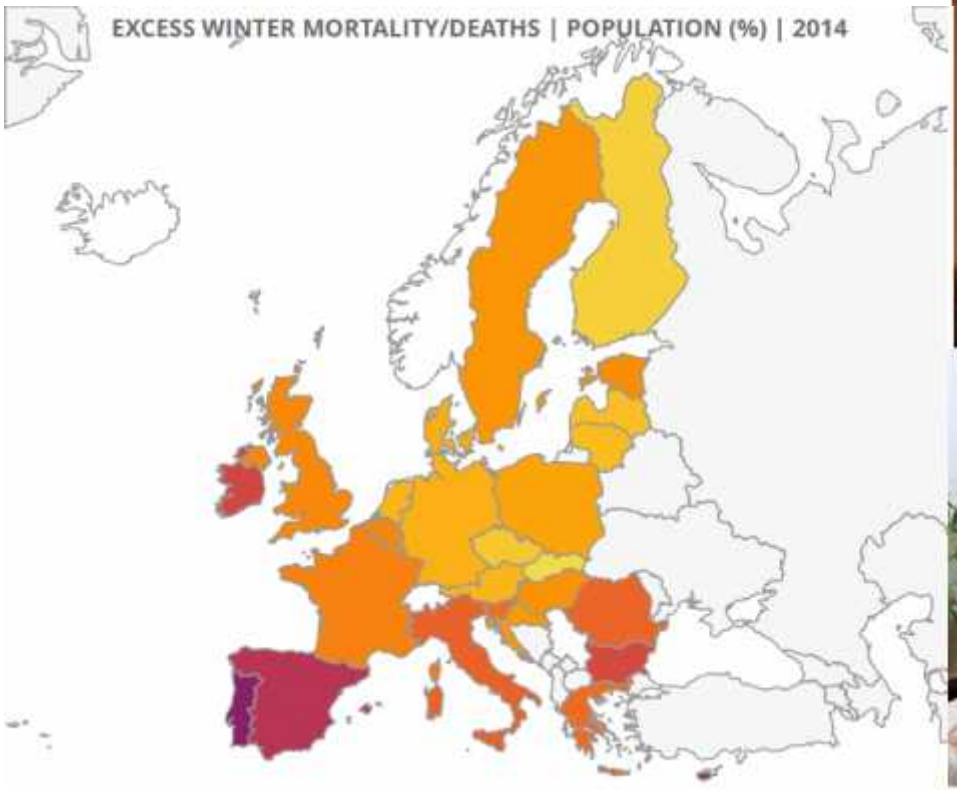
Source: Dobbins et al 2019

- Main differences lie in the types of fuels included, the intervention timeframe, the target group and the designated implementing agent
- Do the definitions identify the problem?
- Critical for action!

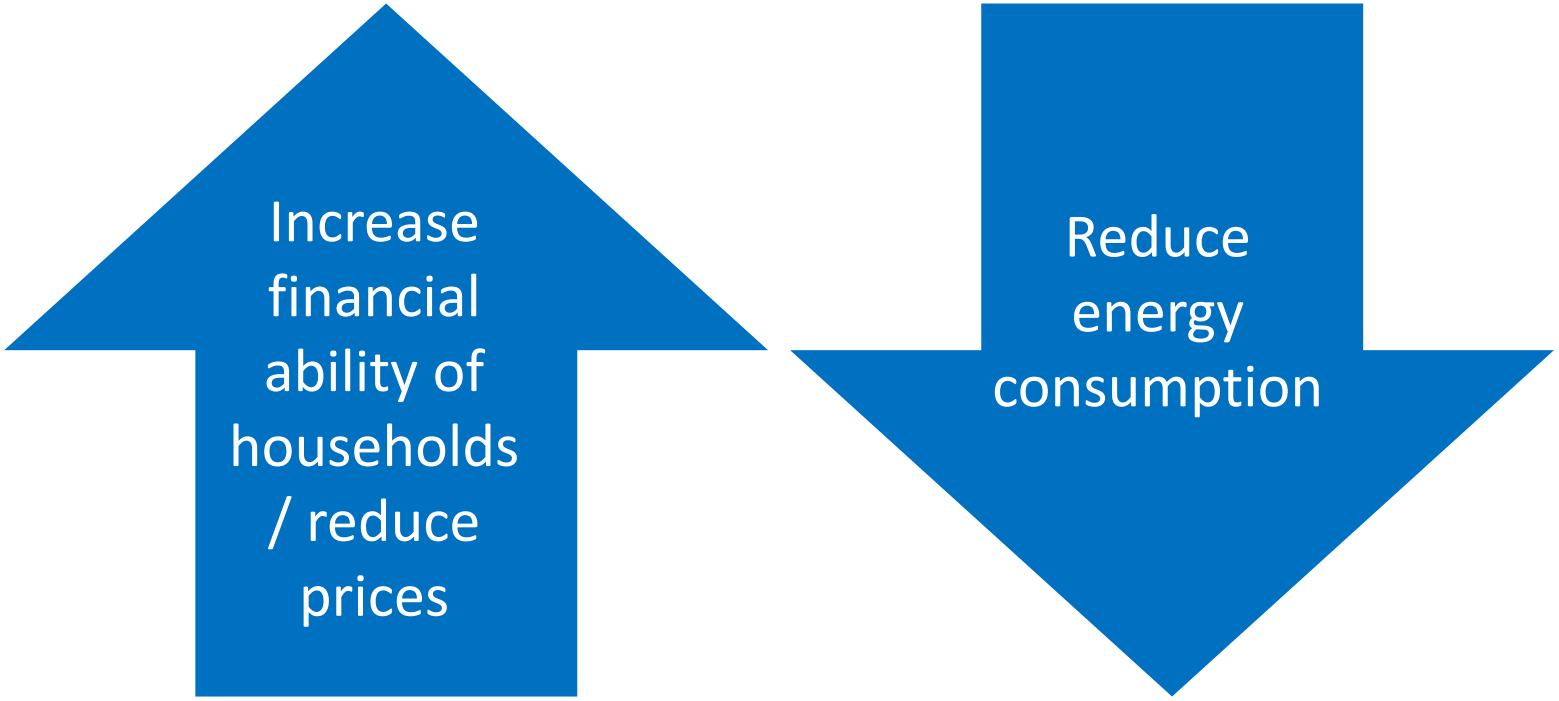
New EU Electricity and Gas Directives (2019) Include designation for vulnerable consumers and energy poverty, but…

Impacts of energy poverty

- **There are short-term and long-term costs associated with inaction!**
  - Impacts on health leading to increased respiratory diseases, excess winter deaths, etc.
  - Impacts on economy and ability to achieve energy transition targets and objectives



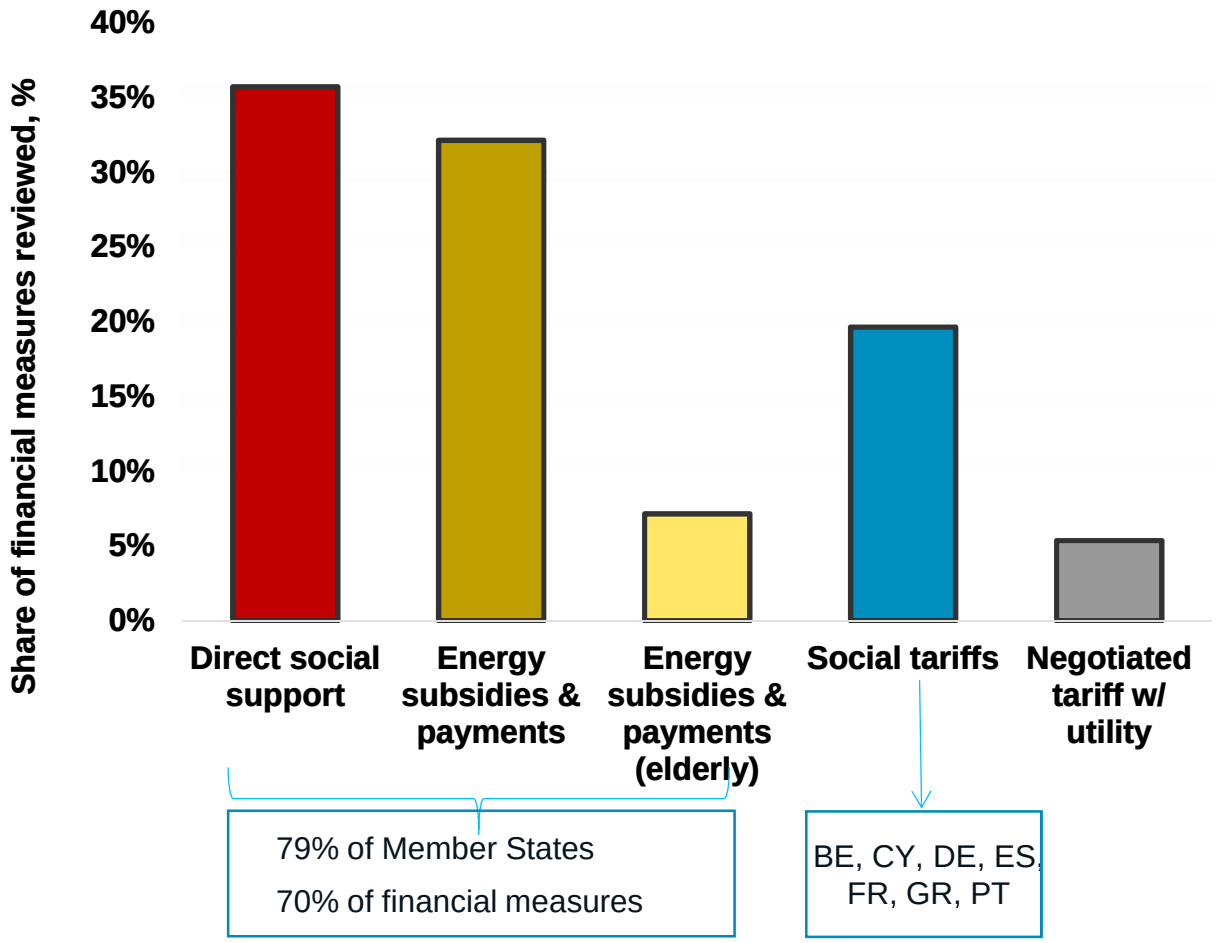
Which measures do European countries use to address energy vulnerabilities?



280 measures reviewed across EU-28	Financial Support (20%) 56 measures	Consumer Protection (27%) 74 measures	Info / Awareness (21%) 58 measures	Energy Efficiency (32%) 90 measures

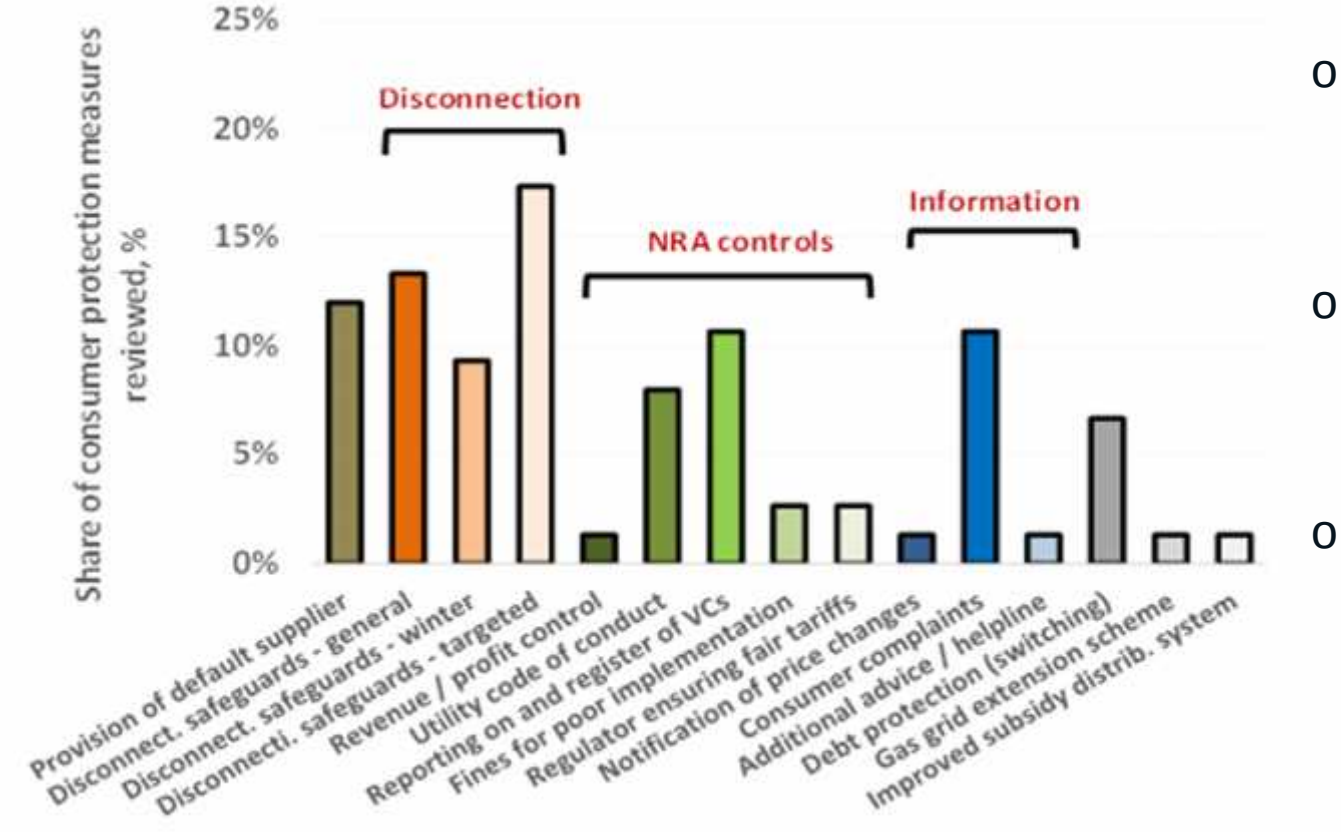
Source: Pye et al 2015

Financial support



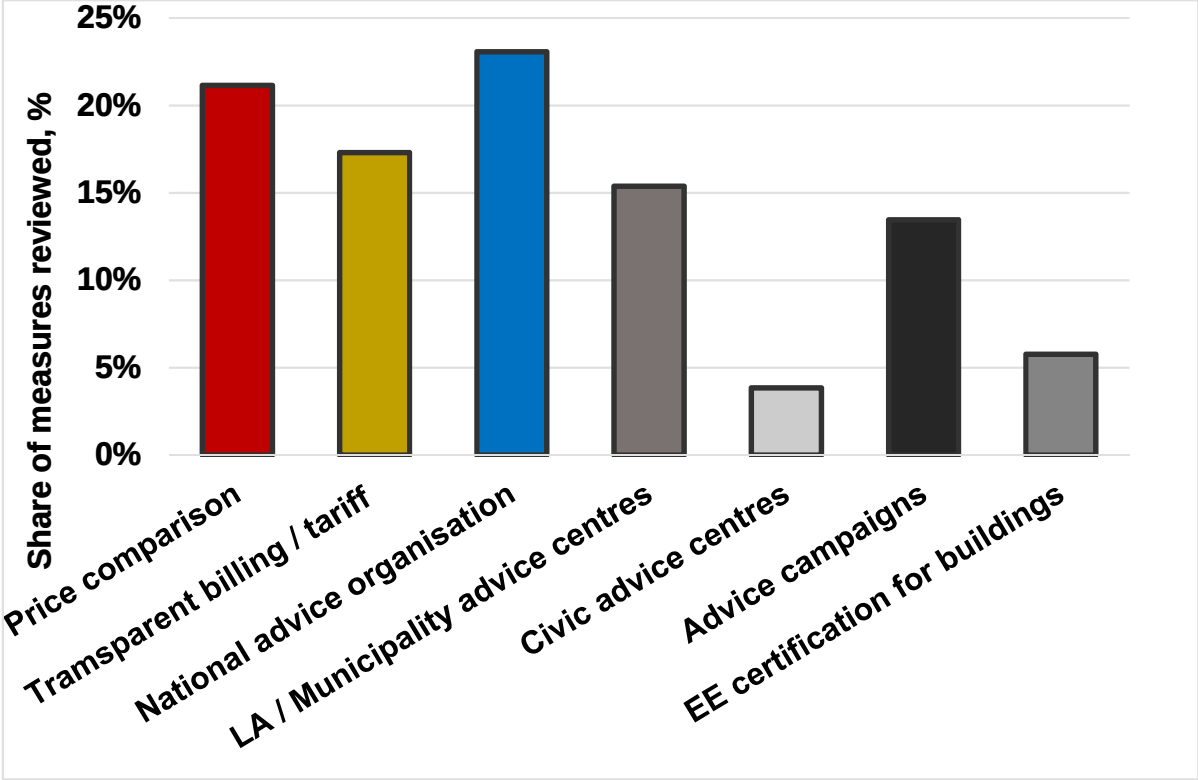
- a crucial means of short-term protection for vulnerable consumers.
- Largely distributed through the social welfare system to both identify recipients of support and issue payments.
- short-term financial relief should run in parallel to other measures

Consumer protection



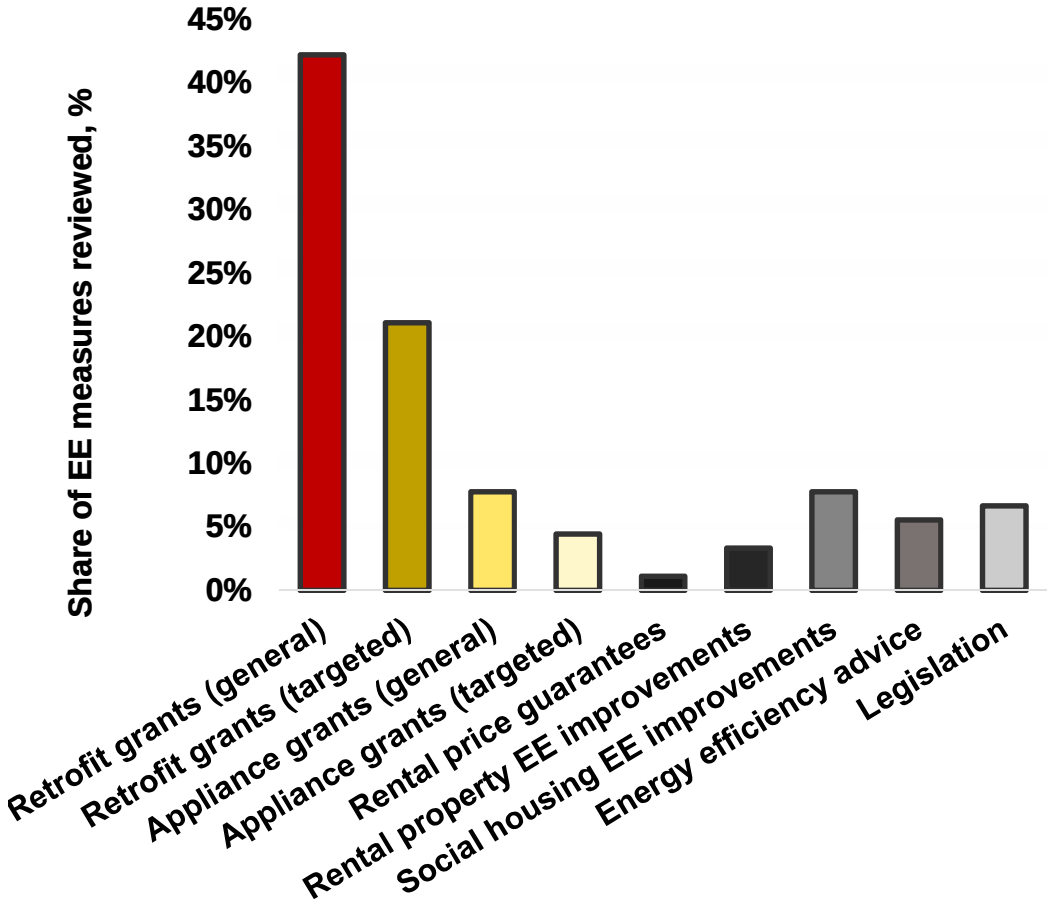
- focus on vulnerable consumer protection, and are dominated by **disconnection safeguards**
- diverse set of measures, primarily coordinated by **regulators** and energy supply companies.
- Many **additional measures** e.g. codes of conduct, debt protection are often most prevalent in **strongly liberalised markets**.

Information and awareness



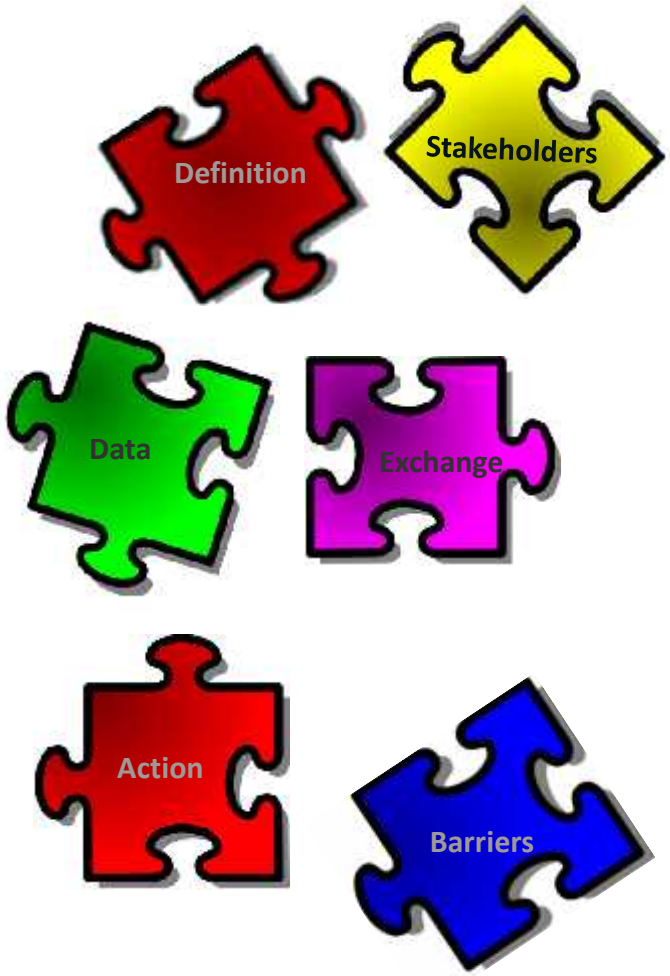
- Improves understanding of consumer rights and information on market tariffs
- Measures relating to price comparison and transparent billing, are often found in Member States with the most **liberalised** markets.
- Where there is a strong civic society movement in relation to energy or fuel poverty, the number of **awareness campaigns** is higher.

Energy efficiency interventions



- key part of a strategy to address the underlying cause of energy poverty
- considerable scope for increased and better targeting
- Long-term and short-term energy efficiency (benefits & potential risk of increased rents)

Concluding remarks on addressing energy poverty in the EU context



- A common definition is key – without this we see a fragmented response, confusion and inaction
- Top-down leadership will help provide a strategy, mandate and budget, and coordinate different responsible government bodies and stakeholders as well as bottom-up activities
- Countries can learn from each other's experiences
- Solutions should build on addressing the underlying causes (lack of energy efficiency, inability to pay bills) and acknowledge that there is no one size fits all solution; energy poverty is multifaceted, so a multipronged, cross-sectoral approach will be needed

EnerKey Lilliesleaf Action Plan recommendations for liveable buildings and an inclusive built environment

- No one size fits all solutions! Parallel measures to address various factors: affordability, efficiency, empowerment of households through information and opportunities
- There are similarities in the types of solutions that will bring change
- There is a wealth of information and a great opportunity to learn from each other, especially in terms of local innovation!

- **Better living through better buildings:** New buildings to comply with advanced energy efficient building standards; adapted solutions for low income households; begin with passive energy saving measures before implementing active technologies -> energy efficiency in policy development
- **Appliances for modern living:** Solar water heaters and efficient lighting for higher income households. Lower income households switch to improved cooking stoves
- **Integrative urban development:** Empowerment of communities, develop exemplary city quarters; engage neighbourhoods; combine living, working leisure

Source: Kopatz et al. Energiewende

Source: Mark Lewis

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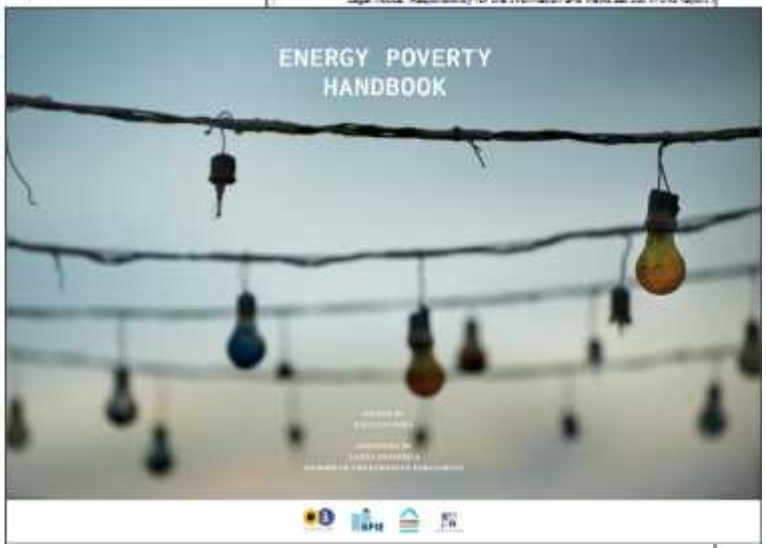
Resources



- https://www.nature.com/nenergy/volumes/4/issues/1
- http://meszerics.eu/pdf/energypovertyhandbook-online.pdf
- http://www.insightenergy.org/

Annual disconnections of electricity and gas across Europe

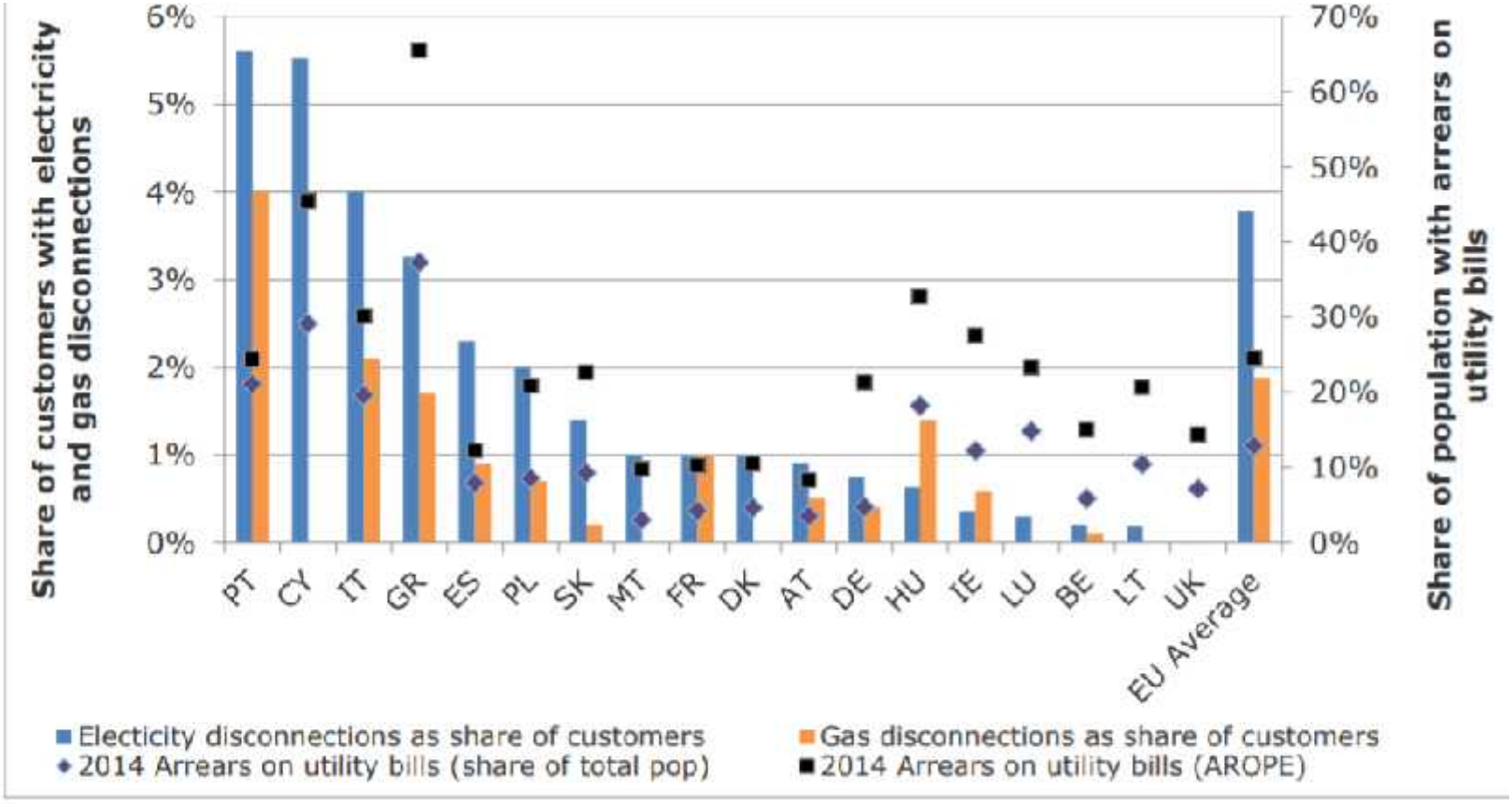


Figure III-1: Share of customers with electricity disconnections, gas disconnection, and share of population in arrears on utility bills (2014)

Source: Dobbins 2016

Energy transition in Germany: households

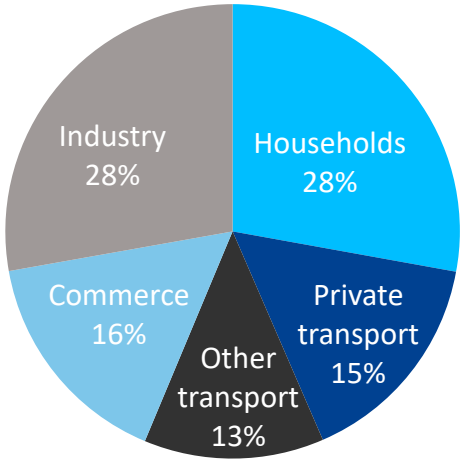
Households

Significant consumers of energy:

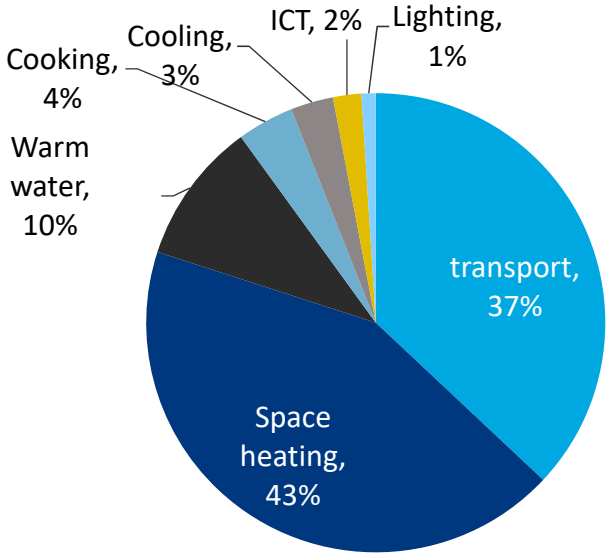
Households consumed ~***28% of the final energy consumption*** in 2013. Together with personal *transport*, households are responsible for almost ***44% of final energy consumption***.
The majority of the household's energy consumption is for space heating (43%) followed by transport (37%)

AGEB 2017, Destatis 2015, ADAC 2008

Final Energy Consumption by sector, 2013



Final Energy Consumption for households by end-use, 2013

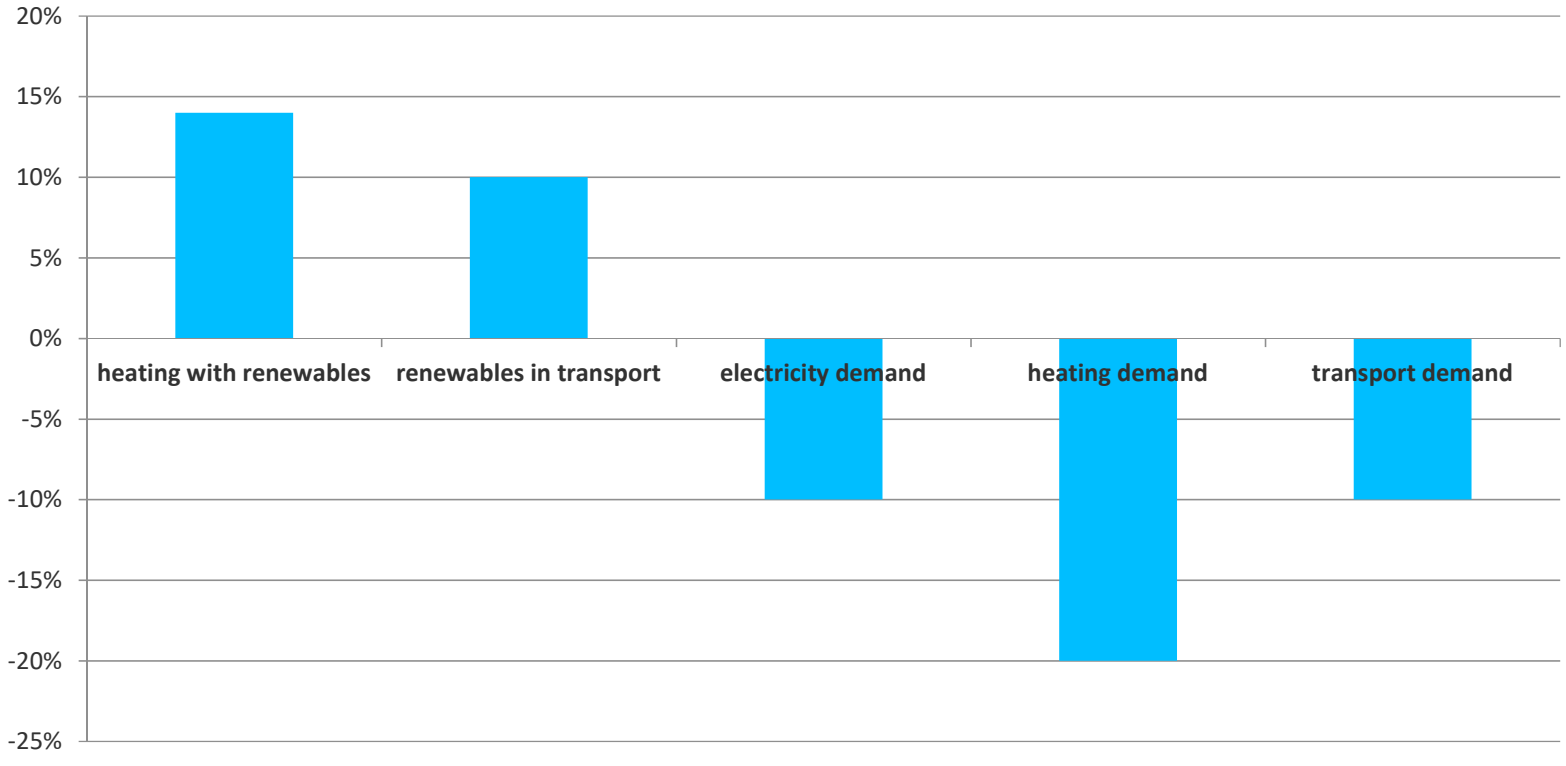


Energy transition in Germany: targets

Energy Transition

- +14% heating with renewables
- +10% renewables in transport
- -10% electricity demand (compared to 2008)
- -20% heating demand (compared to 2008)
- -10% transport demand (compared to 2005)

Households key to successful energy transition by contributing to 2020 targets with:



BMWI 2015