



Hard-to-  
Reach Energy  
Users

# Session 4c

## Breakout session: Vulnerable energy users

BEHAVE Conference, April 22, 2021

Dr. Sea Rotmann (NZ)  
Task Leader HTR Task and CEO of  
SEA – Sustainable Energy Advice Ltd



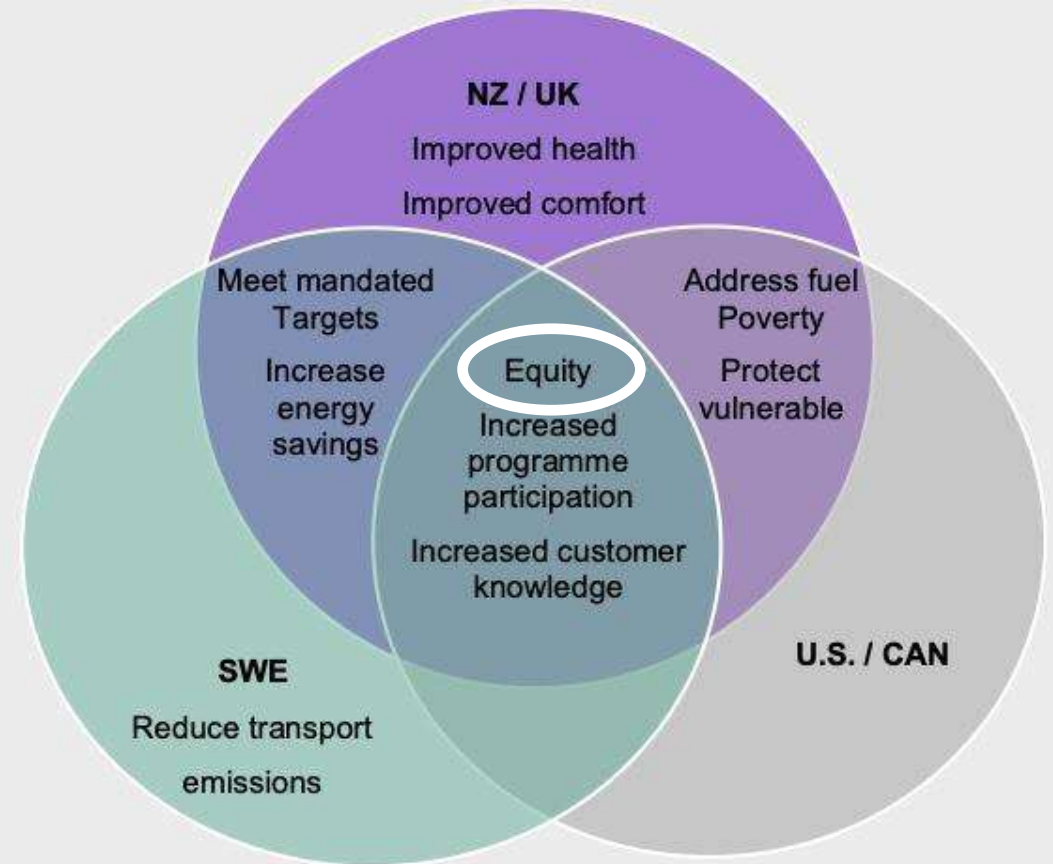
# Hard-to-Reach Energy Users Task

This international research collaboration focuses on a very distinctive and important audience segment - the hard-to-reach (HTR) energy users in the residential and non-residential sectors. It will determine who, and how many they are, where they are, and how to better motivate and engage them in energy efficiency and demand-side interventions geared at changing their energy-using behaviours.



# Our shared goal

*“Our shared goal is to identify, define, and prioritise HTR audiences; and design, measure and share effective strategies to engage those audiences to achieve energy, demand response and climate targets while meeting access, equity, and energy service needs.”*







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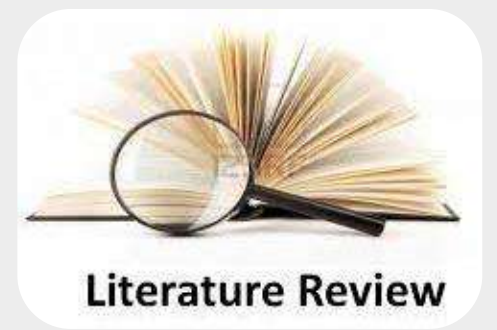


## Our definition of HTR energy users

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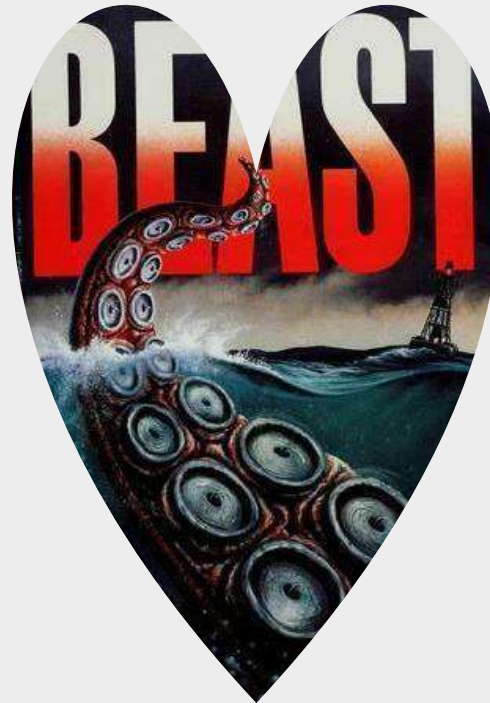
*“In this Task, a hard-to-reach energy user is an energy user from the residential or commercial sectors who uses any type of energy or fuel, and who is typically either hard-to-reach physically, underserved, or hard to engage or motivate in behaviour change, energy efficiency and demand response interventions that are intended to serve our mutual needs.”*

# “The Beast”



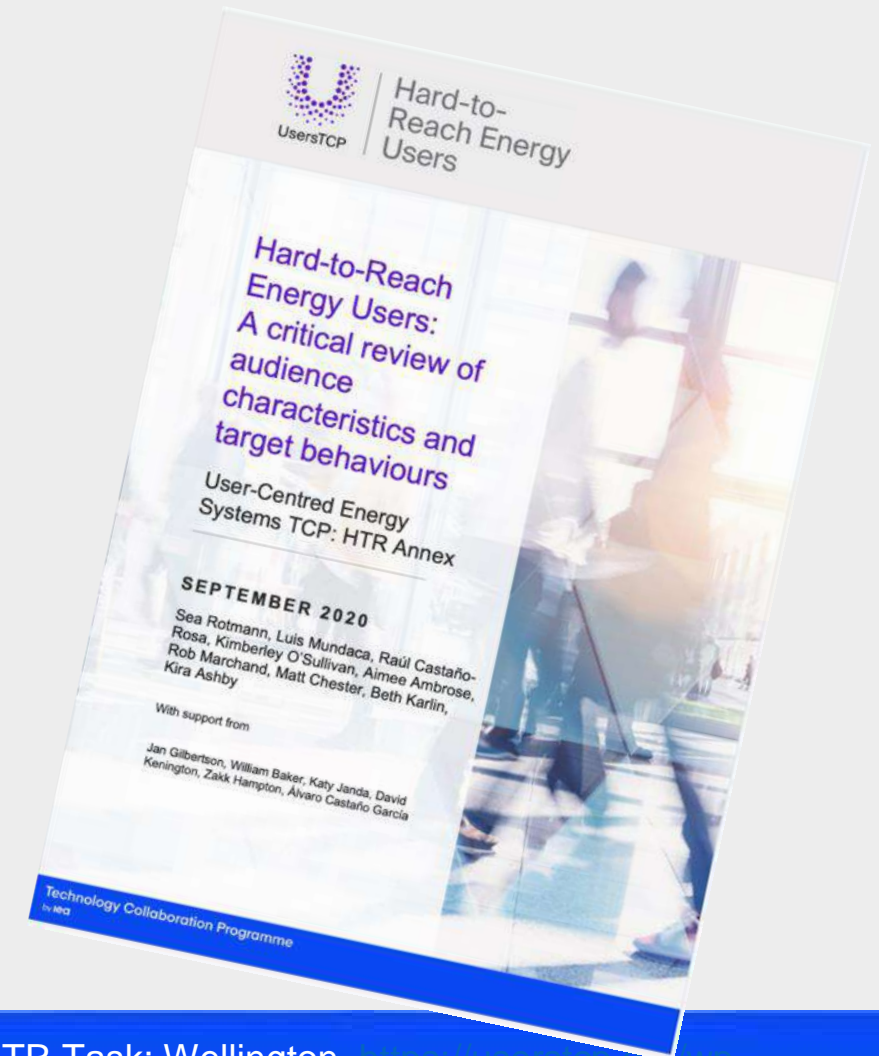
Rotmann, S., Mundaca, L., Castaño-Rosa, R., O’Sullivan, K., Ambrose, A., Marchand, R., Chester, M., Karlin, B., Butler, D. and K. Ashby (2021). *Hard-to-Reach Energy Users: A critical review of audience characteristics and target behaviours*. User-Centred Energy Systems TCP - HTR Annex: Wellington. 255pp.

⇒ Presented in Session 1b from  
Abstract #418.

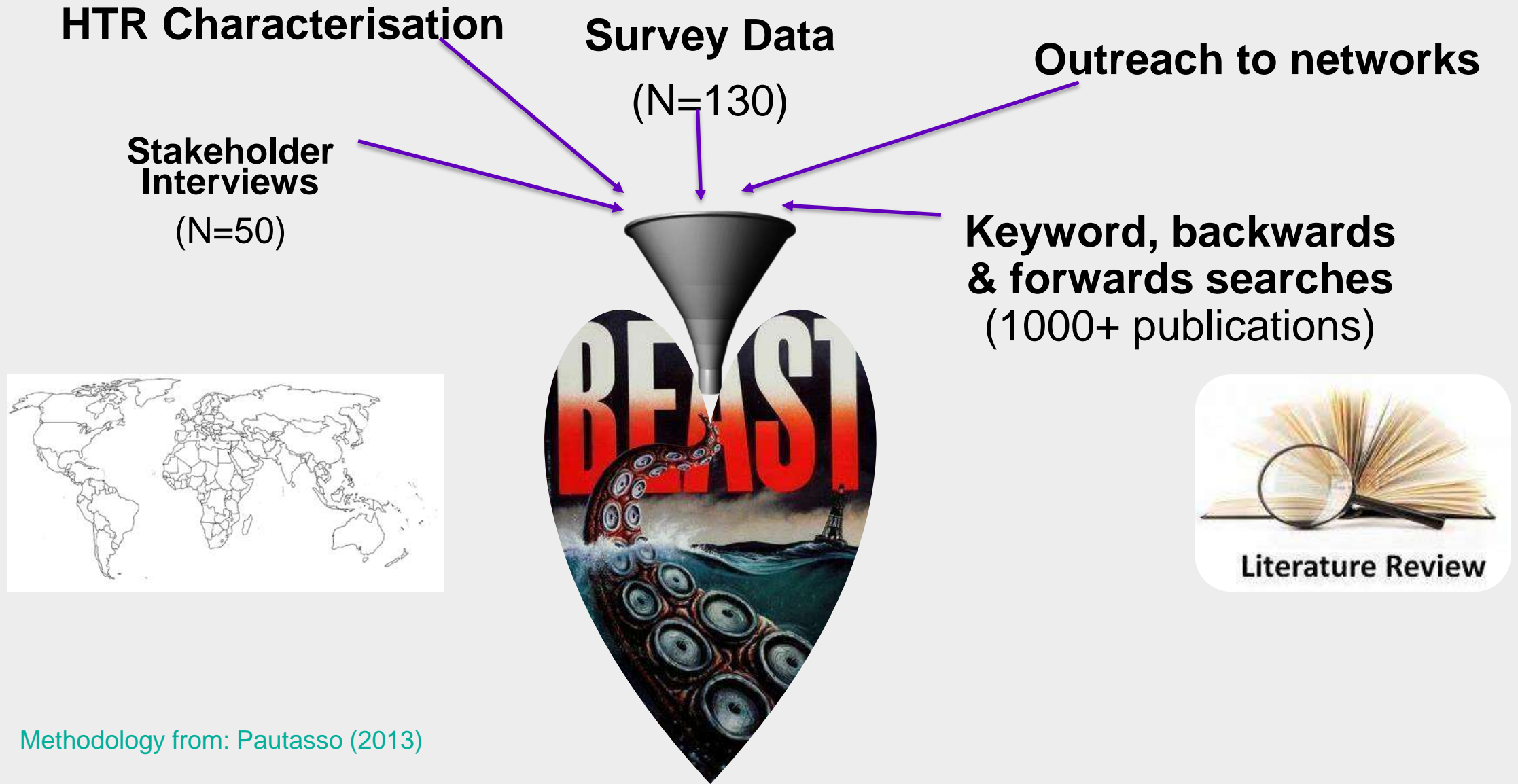


# Purpose to characterise the HTR

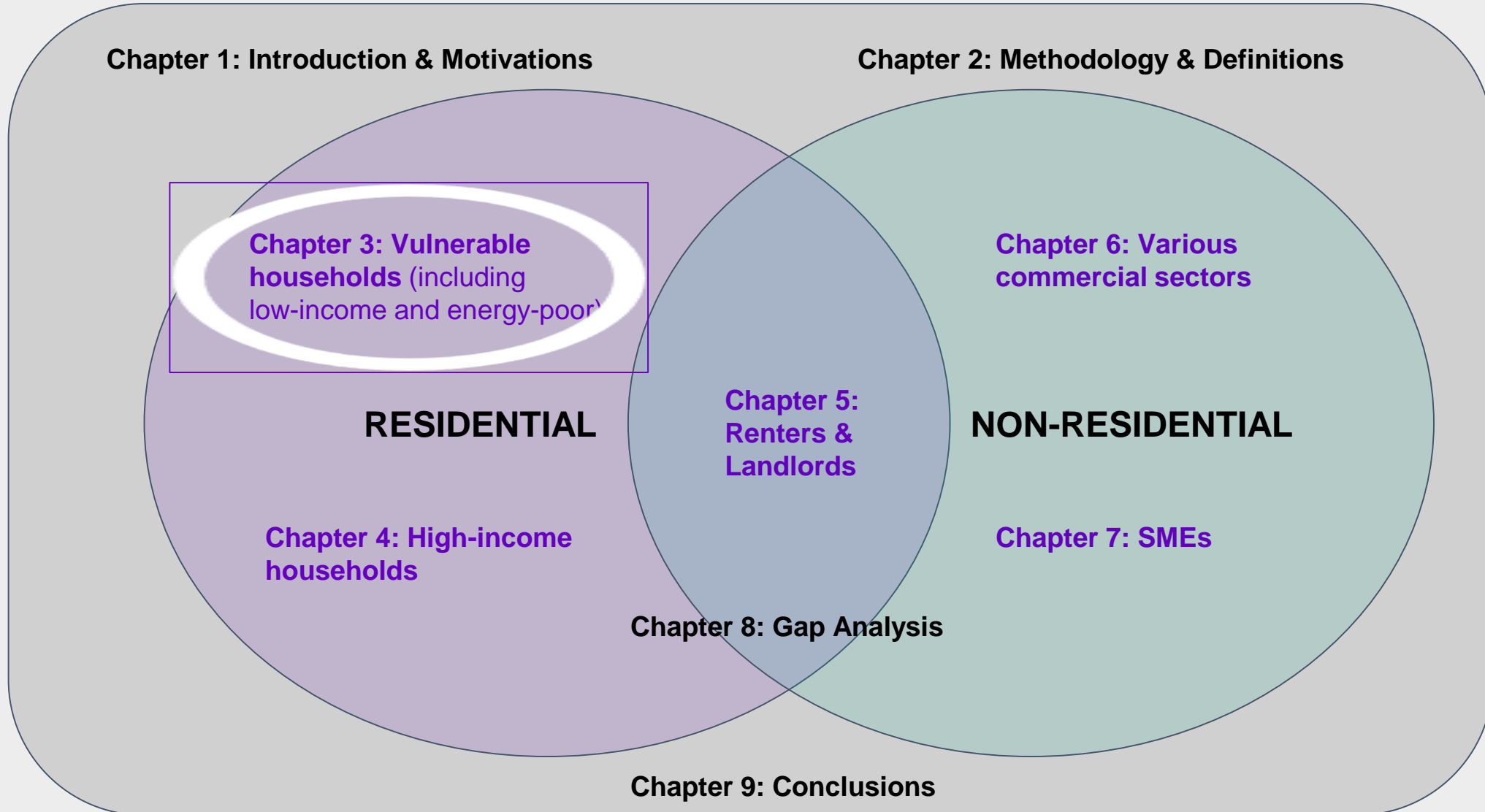
- Identify **priority** HTR audiences (following *HTR Characterisation*)
- **Characterise** and define these HTR audiences
- Understand their wider **contexts** and dimensions
- Identify specific energy-saving **behaviours**
- Estimate the **size** of these audiences
- Undertake a **gap analysis** of the research



# Methodology



# Scope of The Beast





# Some major findings - Definitions

- HTR is commonly-used (in and out of energy sector) but rarely clearly defined and it has many critiques
- Many different definitions in the energy sector, e.g.

*“Those groups which are difficult to engage with from an organisational perspective because they do not feel empowered to do so, or due to barriers which may be overcome.” (Haringey Council, UK, 2010)*

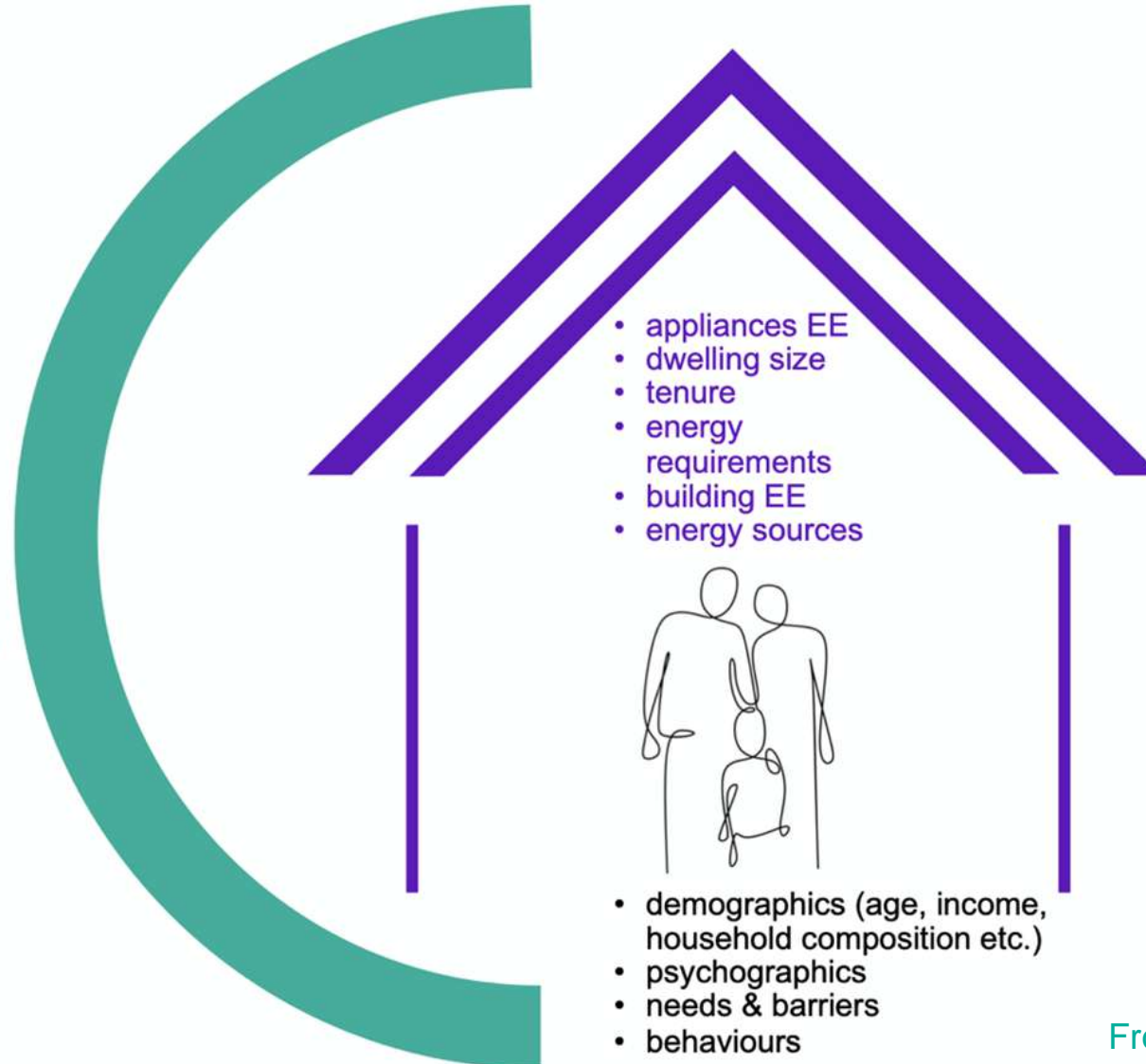
*“Those customers who do not have easy access to programme information or generally do not participate in energy efficiency programmes due to a language, income, housing type, geographic, or home ownership (split incentives) barrier.” (CPUC, 2018)*

*“‘Hard-to-reach!’ exclaimed Kelly. ‘We’re not hard-to-reach, we’re right here! They are the ones who are hard-to-reach.’” (Symons, 2018)*

⇒ Need to consider wider context and factors make these groups HTR

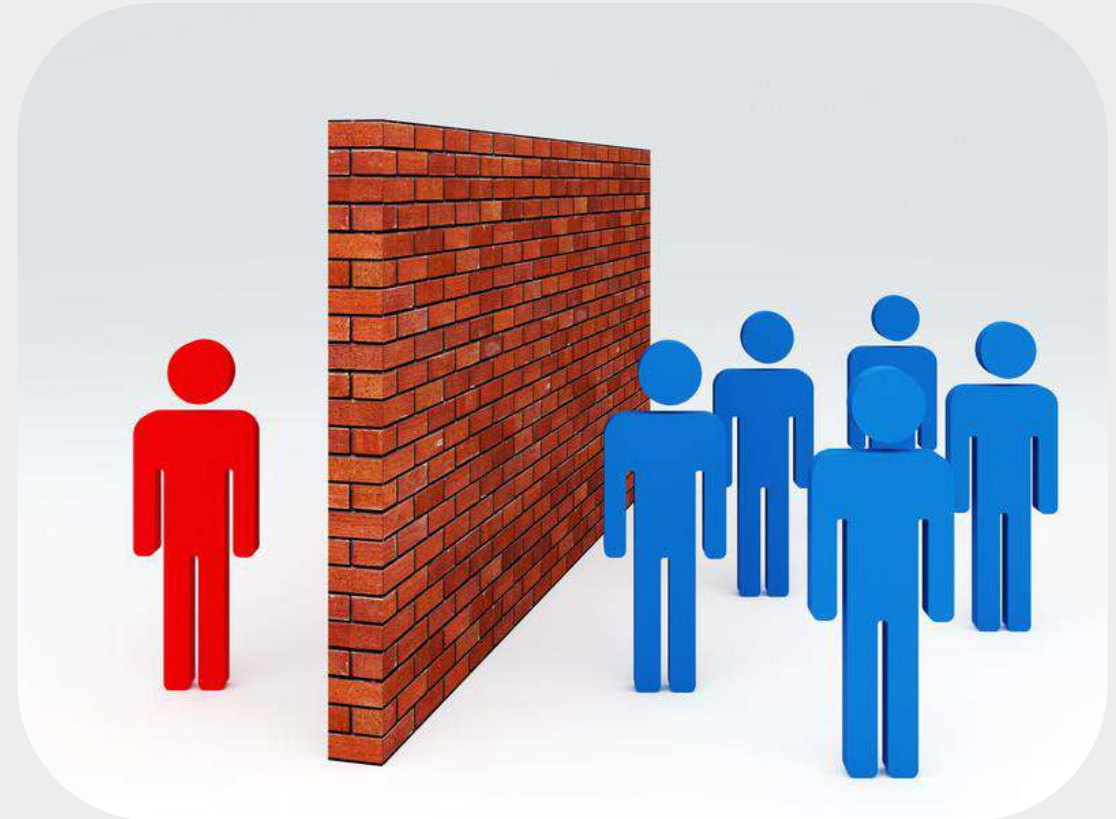
# Vulnerable households - contributing factors

- Climate / outdoor temperature
- energy access / security of supply
- energy affordability / price
- EE standards & regulations
- EE subsidies, other income support
- other EE or behaviour interventions
- energy-use interactions outside the home (with other households, businesses, public facilities, or organisations)
- social relations
- transport / commuting



# Some major findings - Definitions

- One commonality for HTR groups are certain barriers they face, e.g.:
  - Methods of involvement
  - Physical barriers
  - Technological barriers
  - Attitudinal barriers (esp. trust)
  - Financial / resource problems
  - Cultural misunderstanding
  - Gender, Age, Race
  - Timing
  - Competing Life Priorities
  - Perceptions of relevance
  - Etc.



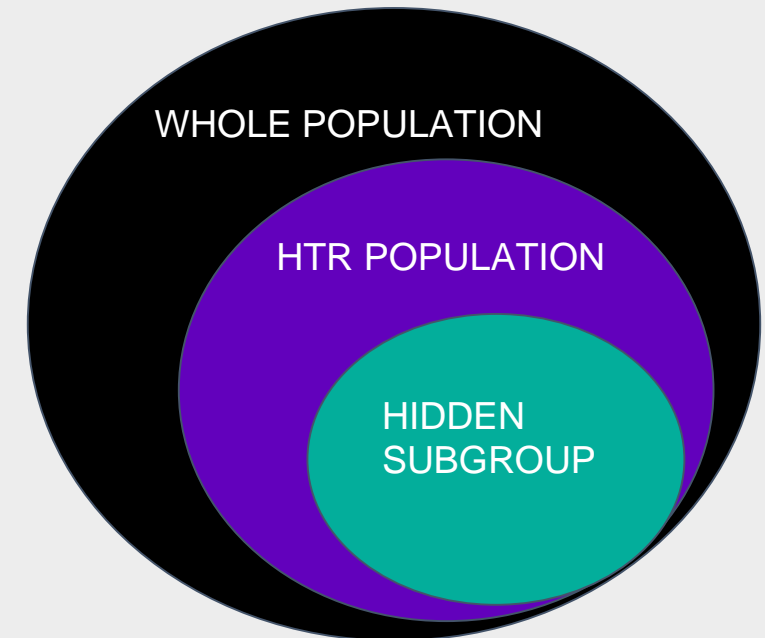
# Some major findings - Definitions

- Many alternative, often overlapping definitions:

- Hard-to-help
- Hidden population / hard-to-hear
- Under-represented, invisible, service-resistant
- Unchangeable
- Hard-to-engage / motivate
- Hard-to-count
- Disadvantaged communities
- Socially-disadvantaged

- Socially-excluded
- Seldom-heard
- Illegalised, criminalised & stigmatised
- Underserved
- Overlooked
- Undercounted / under-explored

- Hard-to-treat
- Hard-to-heat / cool





# Vulnerable households

- Vulnerability:
  - Location-based
  - Financial
  - Health & Capacity-related
- Energy burden / hardship / insecurity
- Energy vs Fuel poverty
- Low-income as defining identifier



# Rental households

- Renters generally consume less energy than owner-occupiers (especially if MFAs) but still account for >25% of residential energy use
- 60% of residential buildings are occupied by renters
- Split-incentive issue one of the hardest to solve
- Power imbalance is one of the biggest barriers
- Both landlords and renters are very HTR



# Home-based SMEs and micro-businesses

- SMEs make up >97% of all businesses in the world, are regarded as hardest-to-reach
- Home-based micro-businesses include contractors, sole traders and businesses with 0-9 employees
- Their energy use is often not captured as commercial usage, thus contributing to higher residential bills especially with lockdown
- Huge impacts from COVID-19





# Households in vulnerable circumstances

## Other vulnerable households:

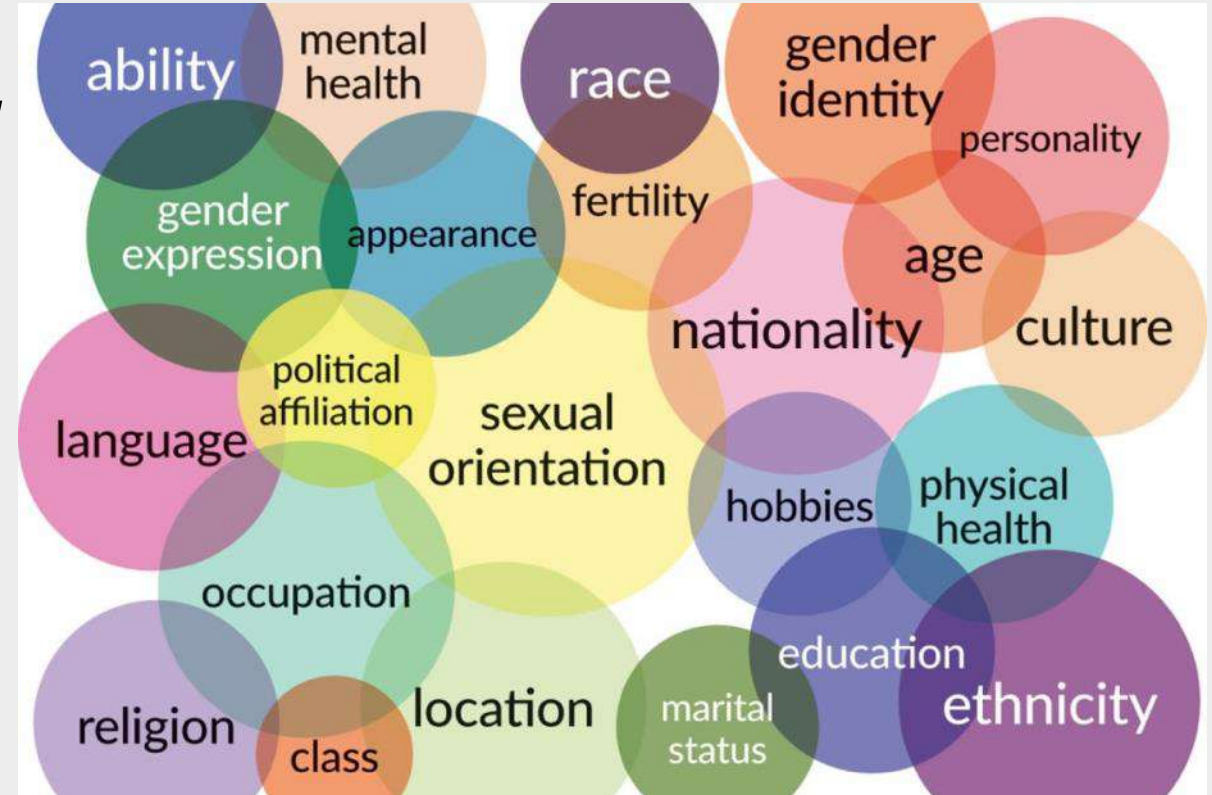
1. *Rural households* (**geographical** isolation)
2. *Minorities* (**gender, race / ethnicity, and health-based** isolation)
  - Women
  - Racial / ethnic minorities
  - Indigenous / First Nations
  - Black, Asian, Hispanic minorities
  - Migrants and refugees
  - Mental or physical ill-health and disabilities
3. *Stigmatised and criminalised* (**societal** isolation)
  - (Ex)convicts, gang houses, drug users
  - Homeless (shelters)
  - Sex workers
4. *Elderly; pregnant women; and single parents with young children* (**age-based** isolation)



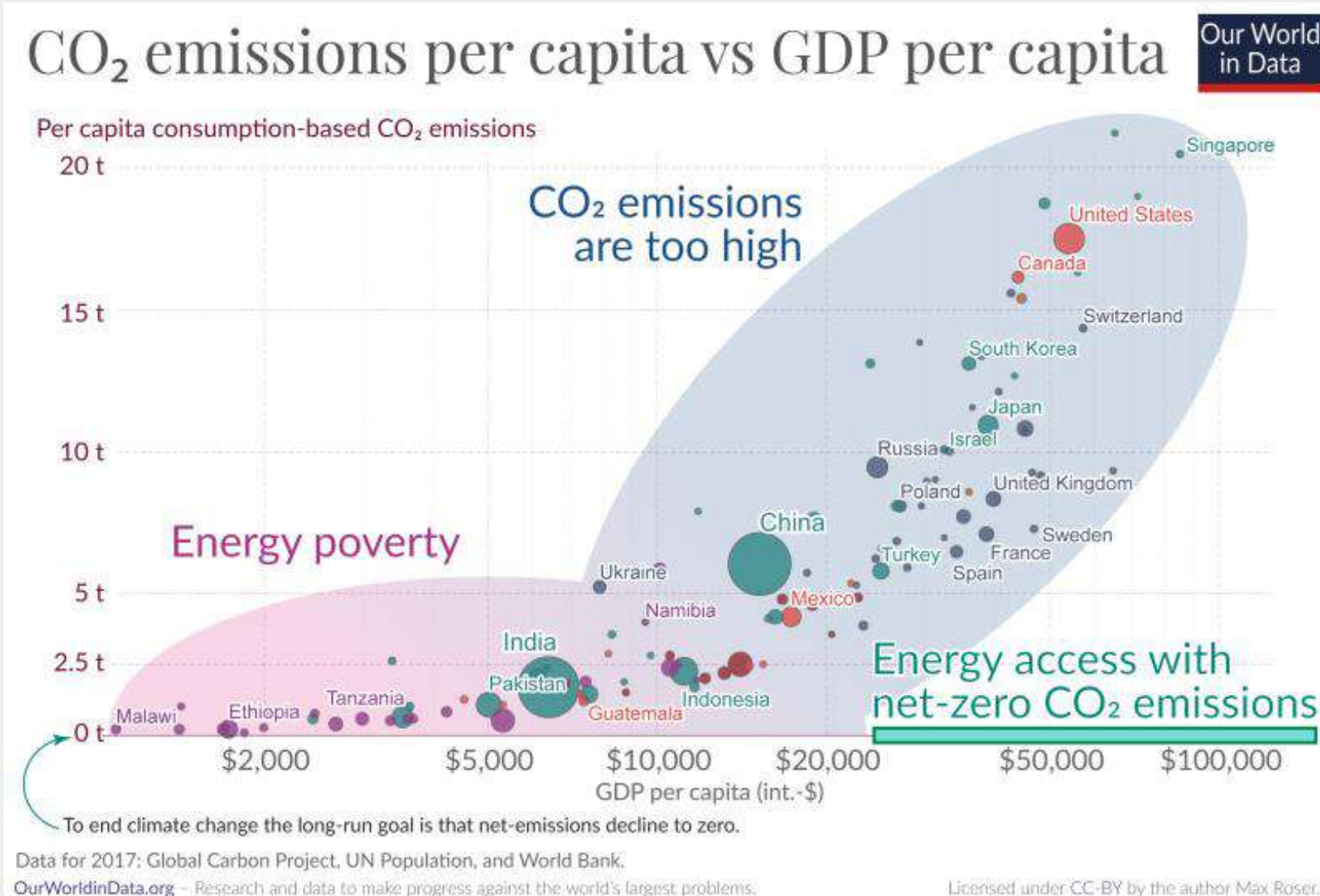


# Problems with the literature

*“The literature does not sufficiently consider the **intersectionality** of vulnerability types and multiple hardships. The use of **numerous terms** for household energy insecurity further compartmentalises energy issues by geography and discipline, hampering the possibility for a comprehensive, or systematic literature base. This **compartmentalisation** foregoes the opportunity to address energy insecurity as a complex, interdisciplinary, intersectional, and multidimensional issue.”*  
Jessel et al (2019)



# Energy vs fuel poverty



Also:

- Energy burden (US)
- Energy hardship (NZ)
- Energy deprivation (EU)
- Energy precariousness (FR)

Rotmann et al (forthcoming)  
Jessels et al (2019)  
Bouzarovski & Petrova (2015)  
Boardman (1991)

# Energy poverty vs vulnerability

*“Measures focused on **vulnerable** consumers offer protection within regulated markets, and facilitate access and participation. They are often short-term in nature, providing relief or ensuring ongoing supply in the face of indebtedness.*

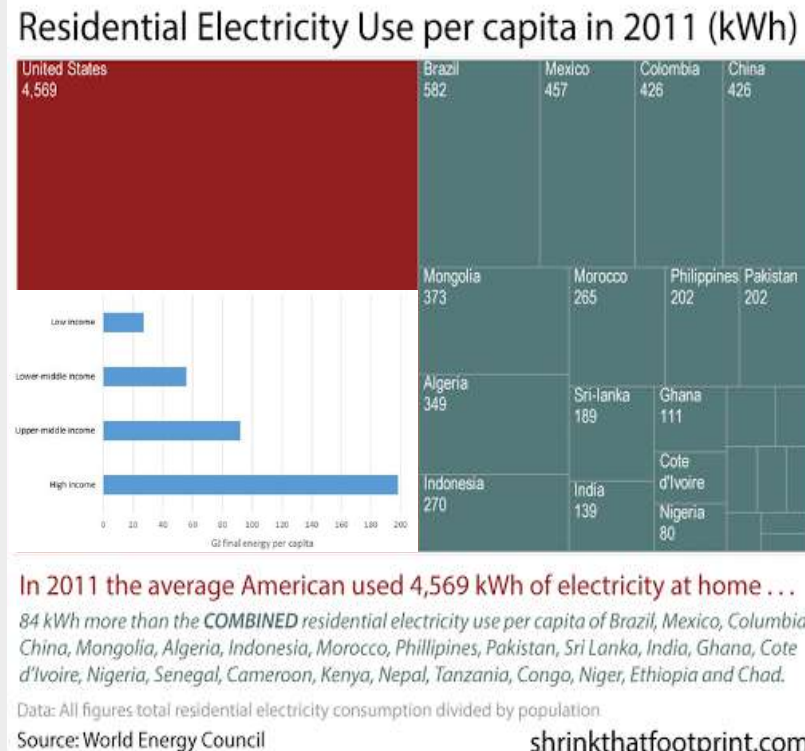
***Energy poverty** measures on the other hand are explicitly focused on lower income households, and seek to address longer term structural problems of building energy efficiency.” Insight\_E for EU Commission (2015)*



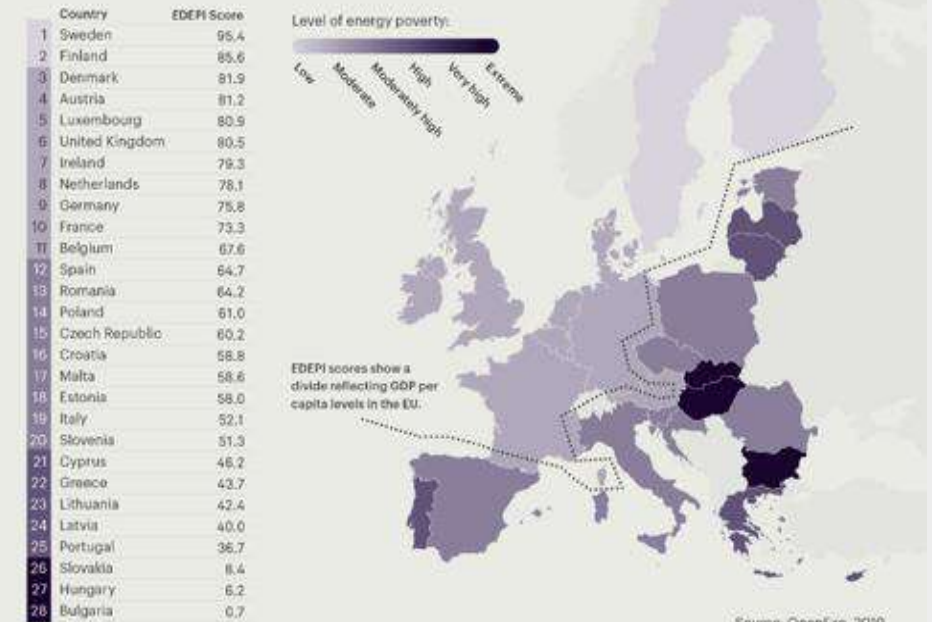


# Energy poverty

1. The **twice poor** (income-poor households with no or very limited net assets)
2. The **protected poor** (income-poor households that have net assets)
3. The **vulnerable non-poor** (non-income-poor households that have no net assets)
4. The **non-poor**.

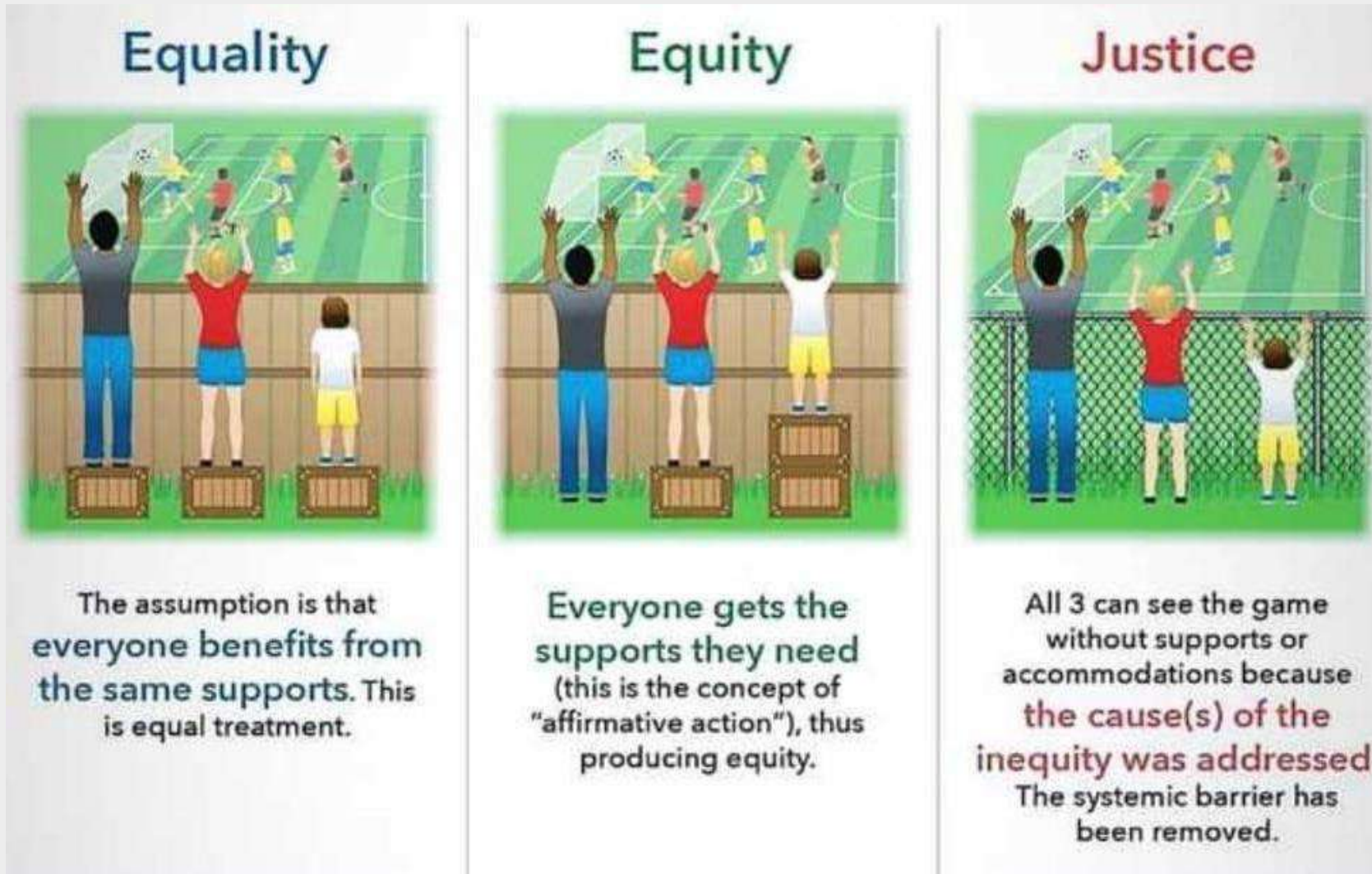


EDEPI scores show the majority of EU countries have 'moderately high' to 'extreme' levels of energy poverty among low-income households





# Energy (in)equality vs equity vs justice



# Key Findings Year 1



- **Most commonly-mentioned HTR audiences in the literature:** Low-income households, renters
- **HTR audiences with great energy-saving potential:** High-income, landlords, building operators
- **Least researched:** SMEs, commercial other than office sector
- **Audience size estimates:** >2/3 of energy users (e.g. >60% renters, 99% of all businesses)
- **COVID-19 impact:** Huge, particularly on most vulnerable households, renters and SMEs
- **Biggest research gaps:** Multiple benefits, certain demographics (age, gender, race), psychographics and audience needs assessments

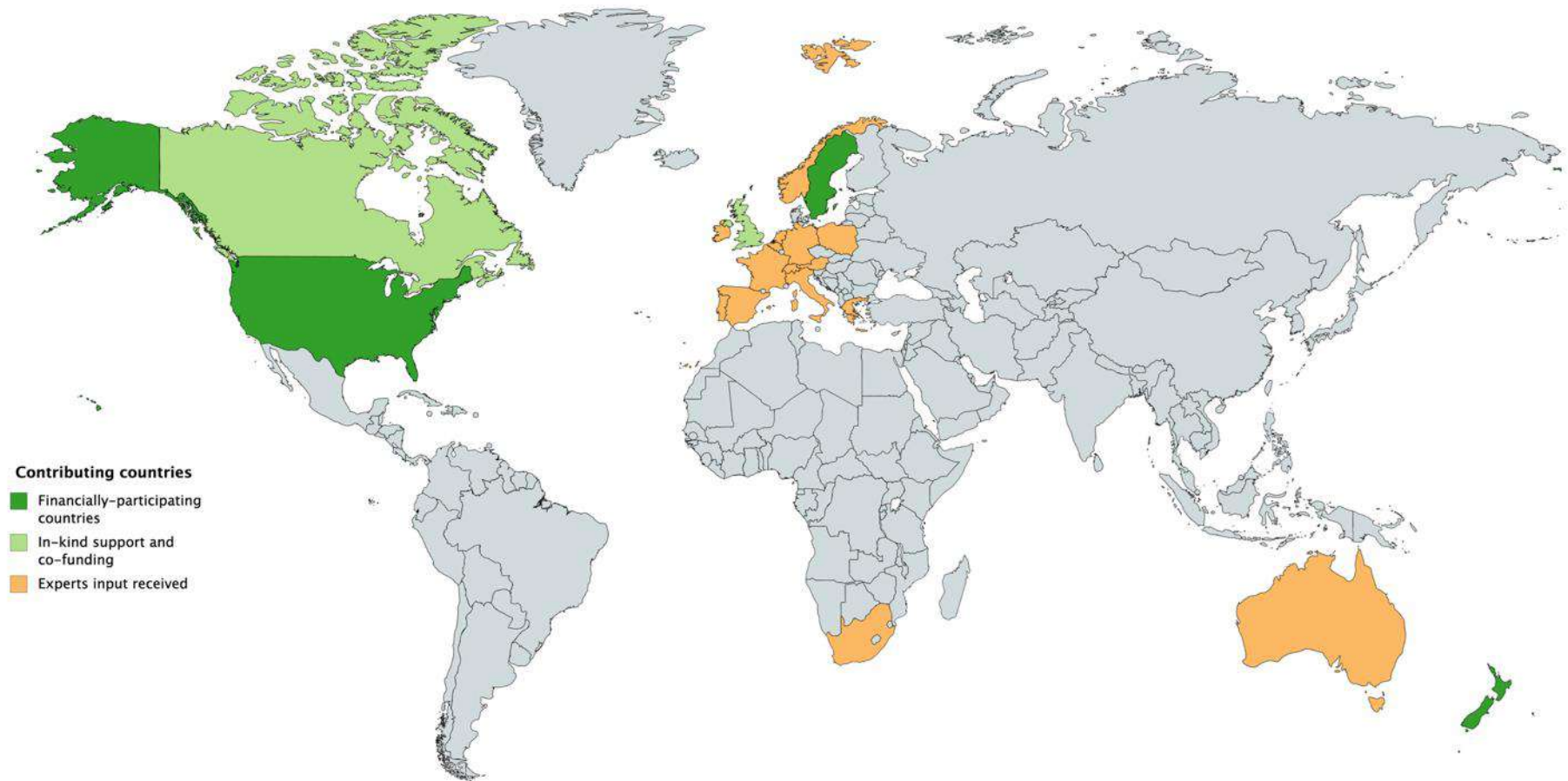
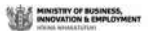
⇒ *These audiences are not only hard-to-reach, they are also underserved and under-researched by Behaviour Changers in industry, government and academia. Energy justice, inequity, stigma are key themes that need to be addressed more urgently & on these target audiences.*

# Work Programme Year 2



1. Cross-Country Case Study Comparison - **we are looking for more case studies / countries!**
2. Research Process published - Karlin et al, 2021 “Building Blocks of Behaviour Change”
3. Field Research Pilots funded - **still looking for co-funding**
4. Dissemination
  - BEHAVE (4 extended abstracts), Lit review eBook, Lit review synthesis, eceee Summer Study (1 paper, 1 extended abstract), BECC & BEHAVE panels on HTR Task

# Our Participants and Collaborators







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# Thank you very much for your attention!

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Please add questions to the Q&A  
or email me:

[drsearotmann@gmail.com](mailto:drsearotmann@gmail.com)

Check out our project:

<https://userstcp.org/annex/hard-to-reach-energy-users/>





UsersTCP

# UsersTCP and the International Energy Agency (IEA)

- The **International Energy Agency (IEA)** is an intergovernmental organisation that works to shape a secure and sustainable future for all, through a focus on all fuels and all technologies, and analysis and policy advice to governments and industry around the world.
- To facilitate global cooperation on energy technology, the IEA created the **Technology Collaboration Programme (TCP)**. Today, the **UsersTCP** is one of 38 TCPs each focused on a different topic. Together, they connect thousands of experts across government, academia and industry in 55 countries dedicated to advancing energy technology research and application.
- The UsersTCP is **functionally and legally autonomous** from the IEA. Views and findings of the UsersTCP do not necessarily reflect those of the IEA.