Session 4c
Breakout session: Vulnerable energy users

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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 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.”
Our definition of HTR energy users

“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.”

⇒ 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 from: Pautasso (2013)
Chapter 1: Introduction & Motivations

Chapter 2: Methodology & Definitions

RESIDENTIAL

Chapter 3: Vulnerable households (including low-income and energy-poor)

Chapter 4: High-income households

Chapter 5: Renters & Landlords

Chapter 6: Various commercial sectors

Chapter 7: SMEs

Chapter 8: Gap Analysis

Chapter 9: Conclusions

Rotmann et al (forthcoming)
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

Rotmann et al (forthcoming)
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

From: Rotmann et al (forthcoming)
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.

Cardiff Council (2009) and Ashby et al (2020a and b) and Rotmann et al (forthcoming).
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

Rotmann et al (forthcoming)
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

Rotmann et al (forthcoming)
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

Rotmann et al (forthcoming)
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)

Rotmann et al (forthcoming)
“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)
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)
“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)
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**.

In 2011 the average American used 4,569 kWh of electricity at home...
Energy (in)equality vs equity vs justice

**Equality**

The assumption is that everyone benefits from the same supports. This is equal treatment.

**Equity**

Everyone gets the supports they need (this is the concept of “affirmative action”), thus producing equity.

**Justice**

All 3 can see the game without supports or accommodations because the cause(s) of the inequity was addressed. The systemic barrier has been removed.

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.
1. Cross-Country Case Study Comparison - we are looking for more case studies / countries!
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

Contributing countries
- Financially-participating countries
- In-kind support and co-funding
- Experts input received
Thank you very much for your attention!

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

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Check out our project:

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