



User-Centred  
Energy Systems  
Academy

# How to engage Hard-to-reach energy users - international insights & case studies

Users Academy Webinar, 19 Jan, 2022

**Dr. Sea Rotmann**

Task Leader HTR Task (A-NZ)

**Dr. Danielle Butler**

National Energy Action (UK)





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.



# 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.





Hard-to-  
Reach Energy  
Users



## Our definition of HTR energy users

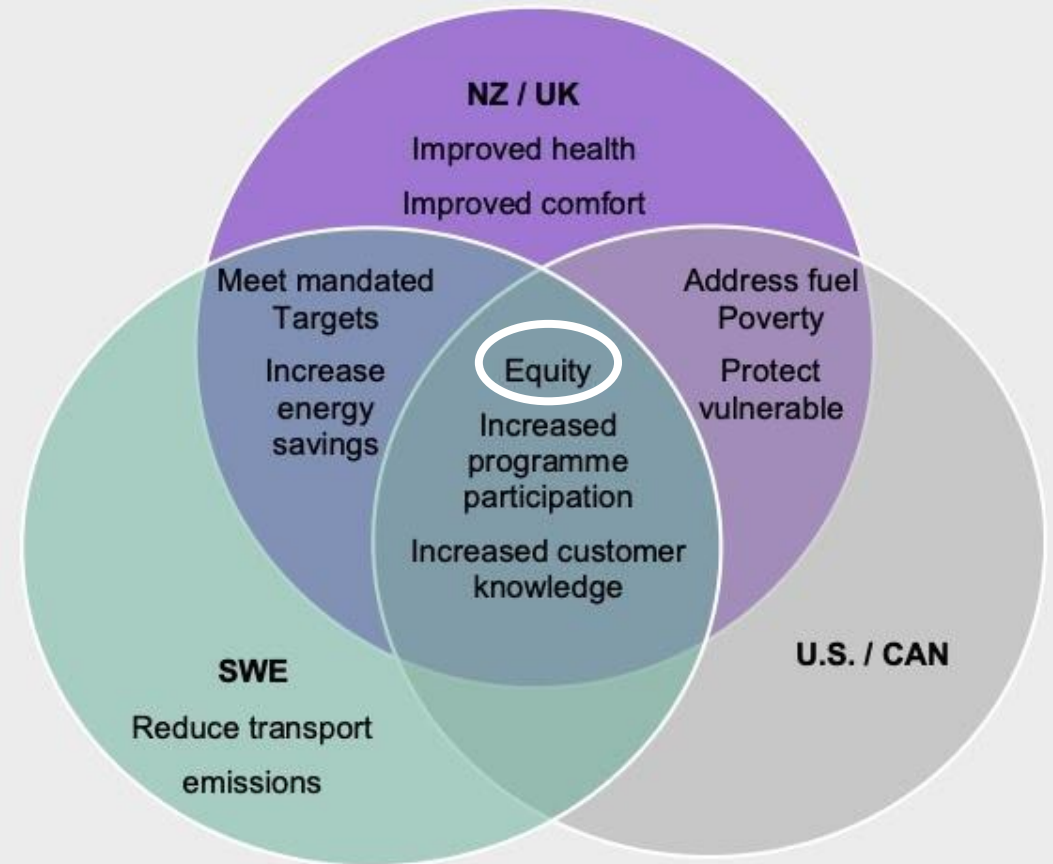
---

*“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.”*



# 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.”*



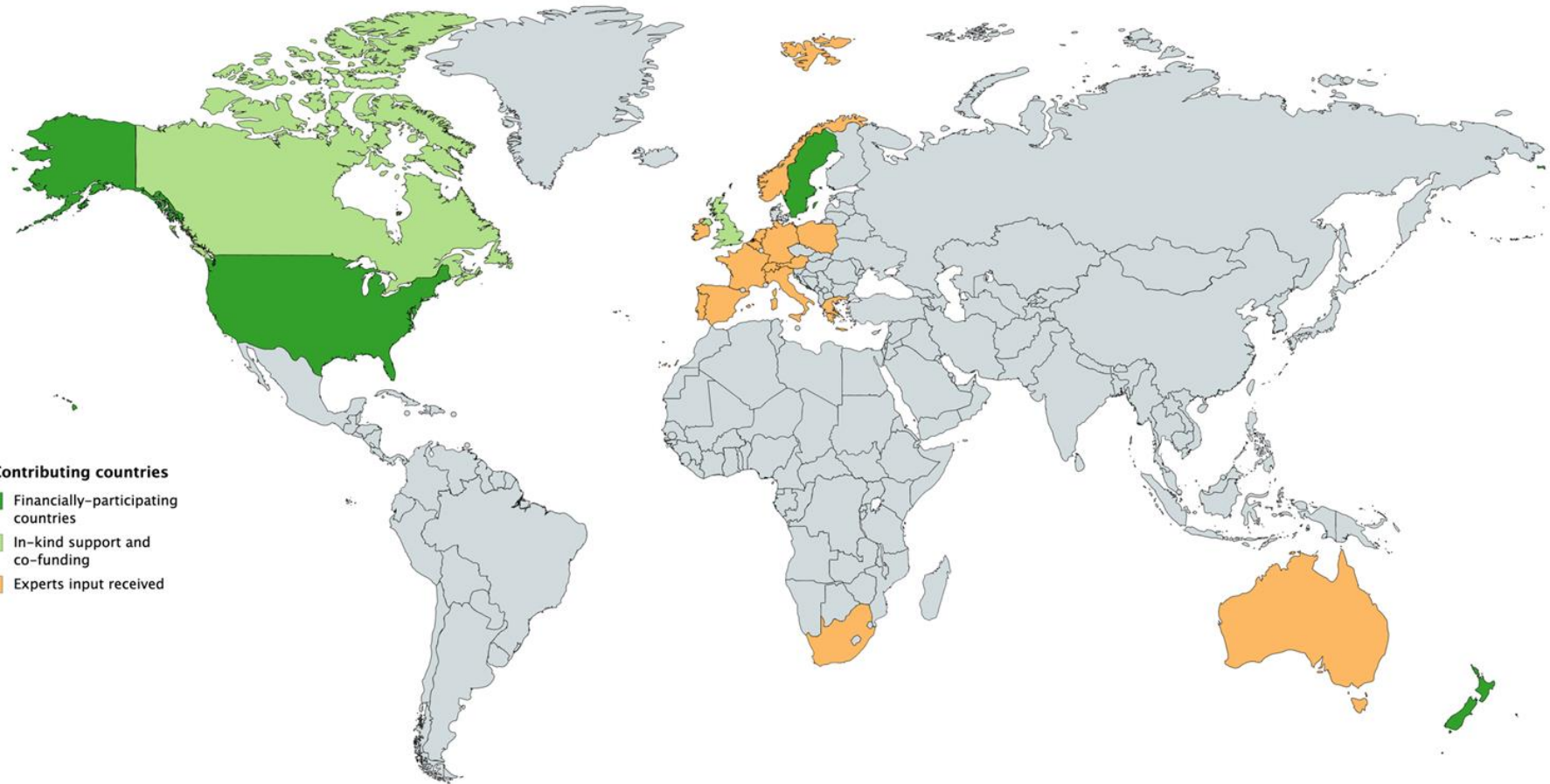


Hard-to-Reach Energy Users

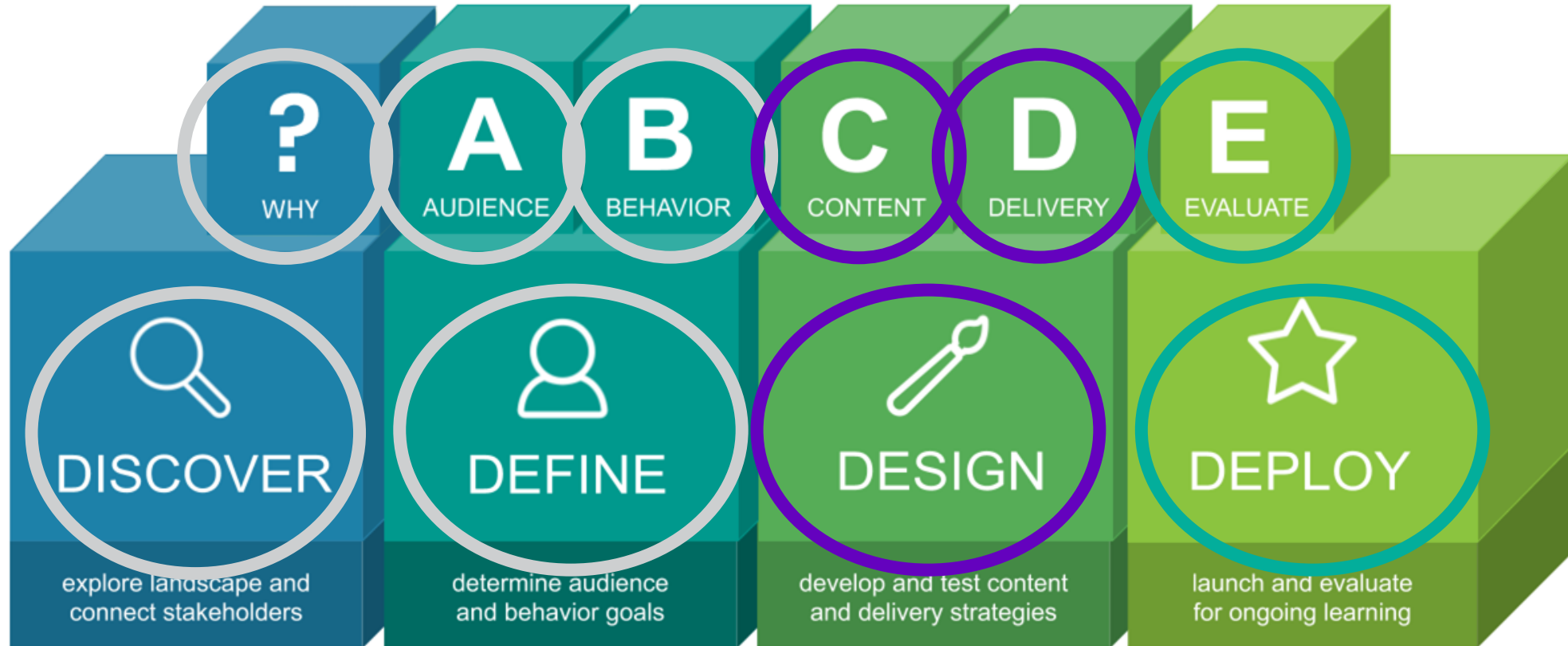
# Our Participants and Collaborators



Action for Warm Homes



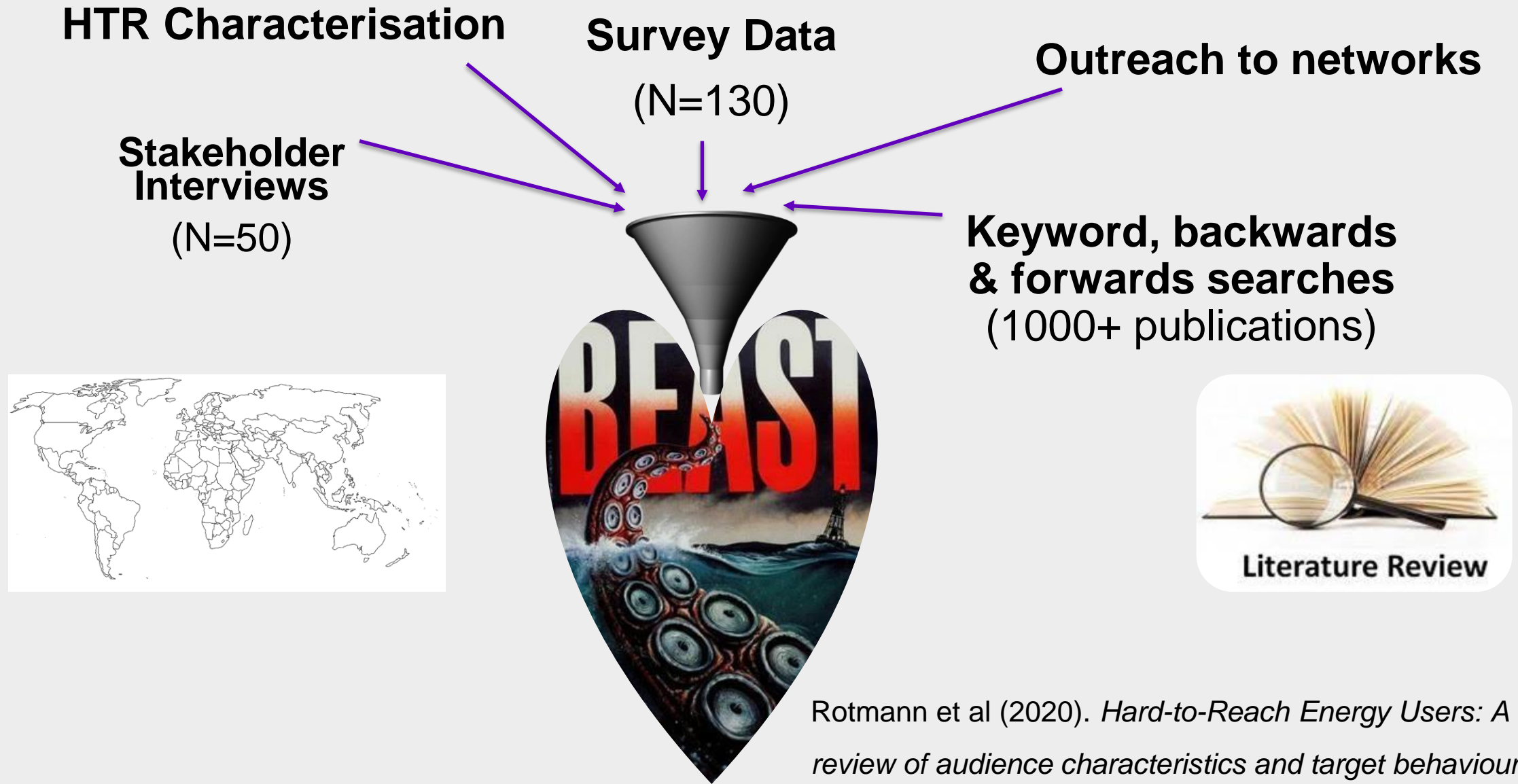
# HTR Task Research Process “ABCDE Building Blocks of Behaviour Change”



Year 1  
Year 2  
Year 3



# “The Beast” - In-depth lit review







# Key Findings Year 1



- **Most commonly-mentioned HTR audiences:** Low-income households, renters, SMEs
  - **HTR audiences with great energy-saving potential:** High-income, landlords, building operators
  - **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:** Commercial sector (outside office buildings, e.g. MUSH), SMEs, multiple benefits, certain demographics (age, gender, race), psychographics & audience needs
- ⇒ *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.*

# Year 2 Research - Case Study Analyses (CSAs)

---

- **8 countries:** Aotearoa NZ, Canada, Italy, the Netherlands, Portugal, Sweden, the UK, the U.S.
- **19 case studies:** Between 1 and 5 case studies per country
- **Residential sector focus:** Low-income audiences with intersecting vulnerabilities (manufactured housing, renters, Indigenous, underlying (mental) health conditions, elderly, pregnant or single mothers with small children, rural and remote communities, frontline staff)
- **Commercial sector focus:** Small businesses
- **Standardised Methodology:** [ABCDE building blocks framework](#), CSA template, interview questions ([Rotmann et al, 2021](#))

⇒ *These CSAs will be synthesised, analysed and published in a peer-reviewed Cross-Country Case Study Comparison and a methodology process paper.*

See [HTR Task Users TCP by IEA website](#) for publications.



Hard-to-Reach Energy Users

# Case Study Authors



[danielle.butler@nea.org.uk](mailto:danielle.butler@nea.org.uk)



[m.sequeira@campus.fct.unl.pt](mailto:m.sequeira@campus.fct.unl.pt)



[kashby@cee1.org](mailto:kashby@cee1.org)



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



[amy.seabrooke@bchydro.com](mailto:amy.seabrooke@bchydro.com)



[mfprojects@live.com](mailto:mfprojects@live.com)



[luis.mundaca@iiee.lu.se](mailto:luis.mundaca@iiee.lu.se)



[povertaenergetica@rse-web.it](mailto:povertaenergetica@rse-web.it)



# Our Country Case Studies



*Healthy Homes Initiative* (government-led)  
*EnergyMate* (industry-led)  
*Well Homes / Warm Fuzzies* (third sector-led)

[Rotmann, S. \(2021\). Case Study Analysis - AOTEAROA NEW ZEALAND.](#)



*Big Energy Saving Network* (third sector-led)  
*Warm Minds* (third sector-led)  
*Gluasad Còmhla (Moving Together)* (third sector-led)  
*Empowered by Energy* (third sector-led)  
*Promoting Sustainability in Business* (academia-led)

[Butler, D. \(2021\). Case Study Analysis - UNITED KINGDOM.](#)



*LIGAR Energy Efficiency for All*  
*Energy Efficiency in Telheiras' Traditional Commerce*

[Sequeira et al \(2021\). Case Study Analysis - PORTUGAL.](#)



*BC Hydro's Indigenous Communities Pilot*  
*FortisBC's Small Business DSM Programme*

[Ashby, K. \(2021\). Case Study Analysis - USA and CANADA.](#)



*Manufactured Homes*  
*Small Business Energy Saver Program*

[Ashby, K. \(2021\). Case Study Analysis - USA and CANADA.](#)



*Energy Efficiency Network for SMEs*  
*Energy and Climate Advisory Services*

[Mundaca, L. \(2021\). Case Study Analysis - SWEDEN.](#)



*SBNOM Social Housing Project*

[Feenstra, M. \(2021\). Case Study Analysis - NETHERLANDS.](#)



*ASSIST2gether* (H2020 project)

[Realini et al \(2021\). Case Study Analysis - ITALY.](#)

# Italy - Case Study Aims & Objectives



*ASSIST2gether* project aimed to design a standardised process or intervention to tackle **energy poverty**, based on a holistic and ground-based approach.

Two phases:

- Education of “**Household Energy Advisors**” (HEAs) with a focus on how to address **vulnerable consumers**;
- Education and consultancy by HEAs to **vulnerable consumers** ⇒ simplified energy audits and advice on low-cost energy efficiency measures, financial aids and energy contracts.

⇒ **Key HTR audiences**: low-income households in energy poverty



# Portugal - Case Study Aims & Objectives

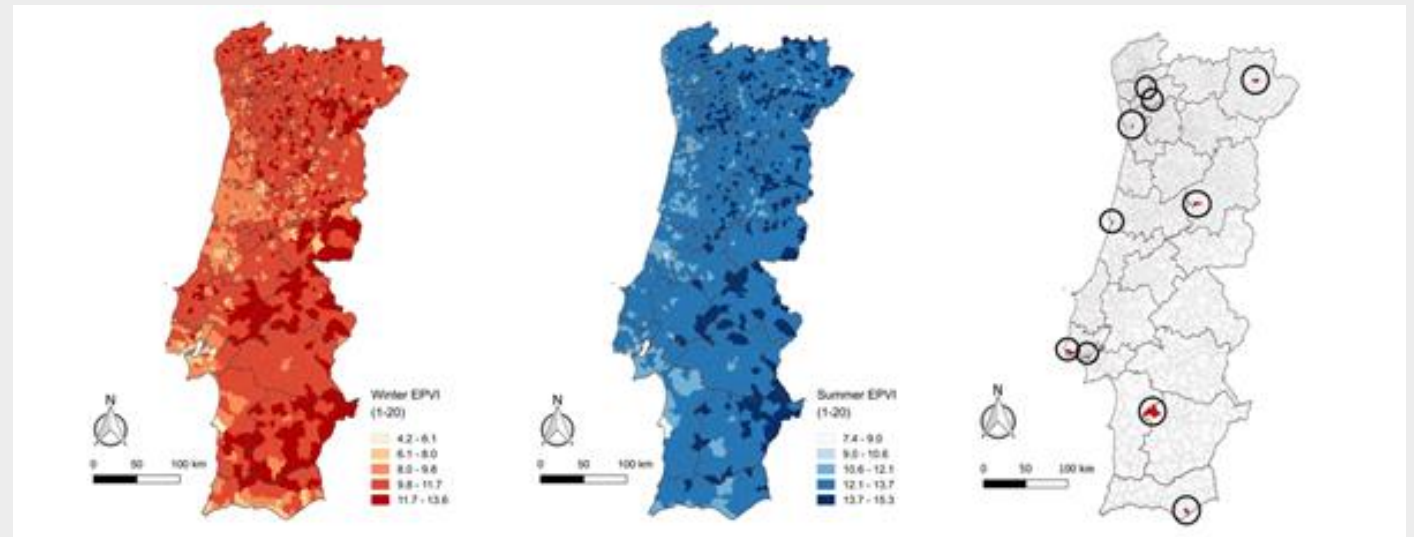


*LIGAR Energy Efficiency for All*: provide a comprehensive approach for consumer engagement actions to increase energy efficiency in vulnerable homes and reduce energy poverty:

- **Energy Poverty Vulnerability Index** for all 3,092 Portuguese civil parishes.
- **100 household interviews** in 10 selected regions.
- **Energy brigades** supported vulnerable households to use energy more efficiently.

*“The feeling of shame, which is transversal to all the analysed profiles, is also a major factor behind the condition of hard-to-reach, since it prevents people from speaking out about their problems”*

Dr. Ana Horta



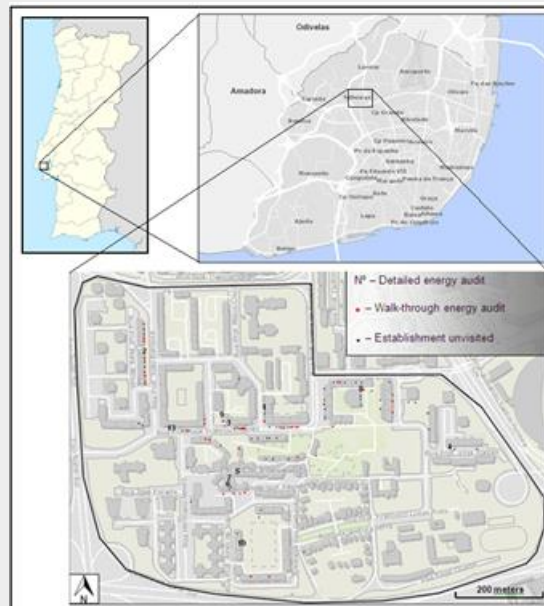
# Portugal - Case Study Aims & Objectives



*Energy Efficiency in Telheiras' Traditional Commerce:* explore the energy-saving potential in the **small business service sector** and the drivers and barriers influencing behaviours and decisions:

- **Inventory and mapping** of all commerce and service enterprises in the neighbourhood.
- 47 small businesses received **energy audits** with a door-to-door face-to-face approach
- Energy audit reports, informal **counselling sessions**, and community **workshops**.

*“So, once it was known that this project was underway, it was easier for the next business managers to accept that this was a good thing. We are offering better knowledge. And people react very well to that.”*  
Prof. João Joanaz de Melo



*“To provide celebration spaces that bring people together, to get people engaged with relevant topics for the community. The important thing is to build relationships, to build trust, and to build a community.”* Mr. Luís Keel Pereira



# Netherlands - Case Study Aims & Objectives



*The SBNOM (FASTER AND BETTER TO ZERO ON THE METER) project: a focus on **co-creation** and **collaboration** in **social housing***

*“The SBNOM project was a 3-year project (from 2016 -2019) in the Southern part of the Netherlands collaborating between 16 partner municipalities, housing corporations and the building industry to retrofit 500 social houses to become zero-emission”*

- partners working together to develop a practical approach to renovate social housing properties on a large scale
- strong marketing and narrative component
- use of short videos and radio broadcasts
- involvement of knowledge partner responsible for monitoring and evaluation: academic (Applied University Avans)
- didn't reach targets of 500 properties - arguably too ambitious







Hard-to-Reach Energy Users

# The UK - Case Study Aims & Objectives



1. ***The Big Energy Saving Network***: a nationally-led, locally delivered network of energy advice and support targeting vulnerable energy consumers and **energy-awareness training for frontline workers**.
2. ***Warm Minds***: this project involved **training for frontline workers** and direct support for individuals (and their carers) living with **mental health issues, dementia/Alzheimer's, and learning difficulties**.
3. ***Glusad Còmhla (Moving Together)***: aims to strengthen interagency working to tackle fuel poverty, and the social determinants of health in **rural & remote communities** in the Western Isles in Scotland.
4. ***Empowered by Energy***: a pilot involving energy-awareness workshops for **recent refugees and other migrant communities** with limited English capabilities.





Hard-to-Reach Energy Users

# The UK - Case Study Aims & Objectives



And a non-residential example:

5. **Promoting Sustainability in Business - A values-based approach**: a set of resources targeted towards intermediaries that work on **promoting sustainability with SMEs**.



*A **shift away from prescribing actions**, instead seeking to engage in meaningful, values-based discussions.*

***Not about changing people**, their views, attitudes or even values, but but about **how best to work with existing values**.*





# Aotearoa New Zealand - Case Study Aims & Objectives



*Healthy Homes Initiative* (government-led): trusted community providers provide warm, dry and healthy housing for:

- **Pregnant women**
- **Low-income** families with **small children sick from housing**, or
- Those small children with **other risk factors**.

*EnergyMate* (industry-led): in-home energy coaching by financial and budgeting mentors to:

- **Low-income** whānau to reduce their energy bills & get warmer homes.

*Well Homes / Warm Fuzzies* (community-led): assists **low-income** families with in-home advice and links them with existing central government programmes for insulation and heating (e.g. HHIs).



*“Housing isn’t just about the house and energy, but about social issues too.”*

Sustainability Trust Energy Advisor



# Sweden - Case Study Aims & Objectives



- *Energy and Climate Advice Services (ECAS) for households*: ECAS aim to bridge the knowledge gap between experts and nonexperts by providing free, impartial information to target audiences.
- *Energy Efficiency Network (EENet) for SMEs*: expert and peer-to-peer platform that strategically supports energy management among participating SMEs.

⇒ **Key HTR audiences**: homeowners, high (income) energy users, non-native speakers, SMEs





# USA - Case Study Aims & Objectives



1. *Puget Sound Energy's Manufactured Homes Programme*: PSE planned for increasing incentives, targeting outreach efforts with Home Energy Assessments (HEAs), putting together a dedicated set of trade allies who were familiar with how to work with the intended **low-income and often Spanish-speaking** audiences.
1. *Duke Energy's Small Business Energy Saver Programme*: aims to improve EE of **small business customers**. They bundle multiple energy saving measures together and promote them as a single project to maximise energy savings while minimising customer effort, time, and transaction costs.



# Canada - Case Study Aims & Objectives



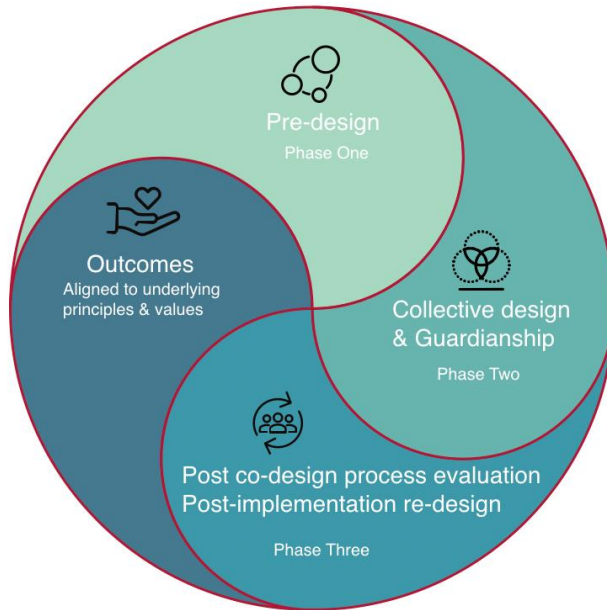
1. *BC Hydro's Indigenous Communities Programme*: The purpose of this pilot was to work with **Indigenous communities** to explore barriers to demand side management and to test and develop approaches that might effectively reduce or eliminate those hurdles.
2. *FortisBC's Small Business DSM Programme*: focuses on both electric and natural gas energy usage and encourages **small business owners** to allow FortisBC to complete an energy assessment and to pledge to take one action to improve the energy efficiency of their business.



# Key Findings across the CSAs

## Co-design Process

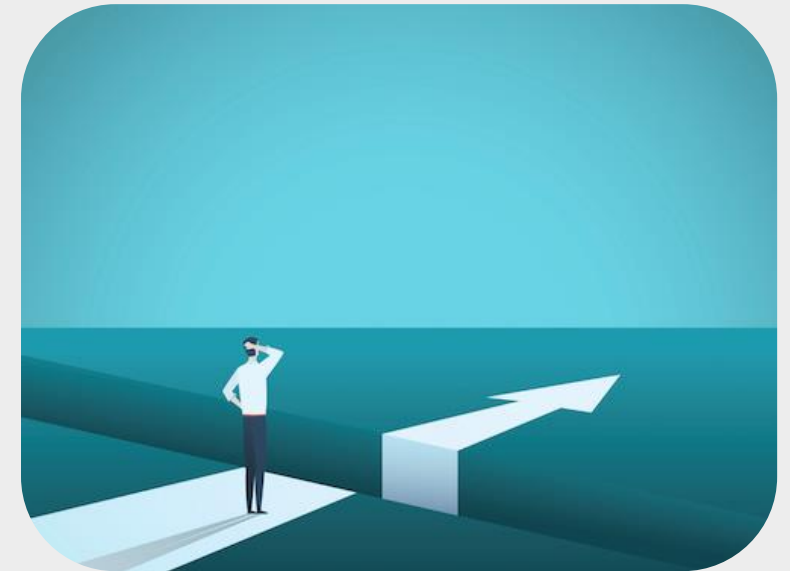
Lived experience informed and designed



Design & Delivery



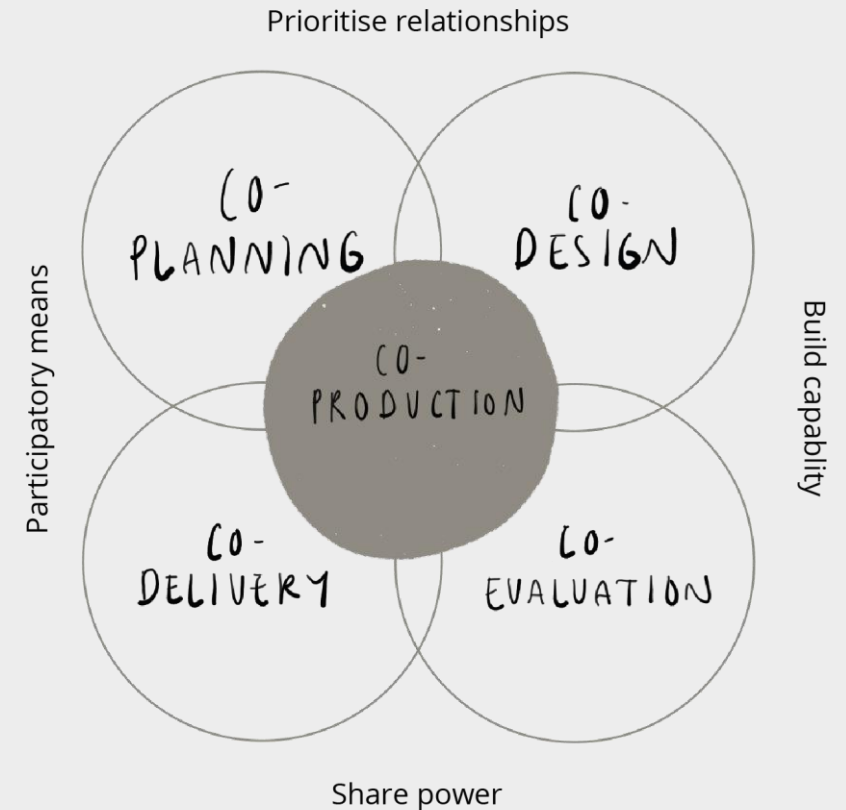
Engagement strategies



Barriers

# Design and Delivery

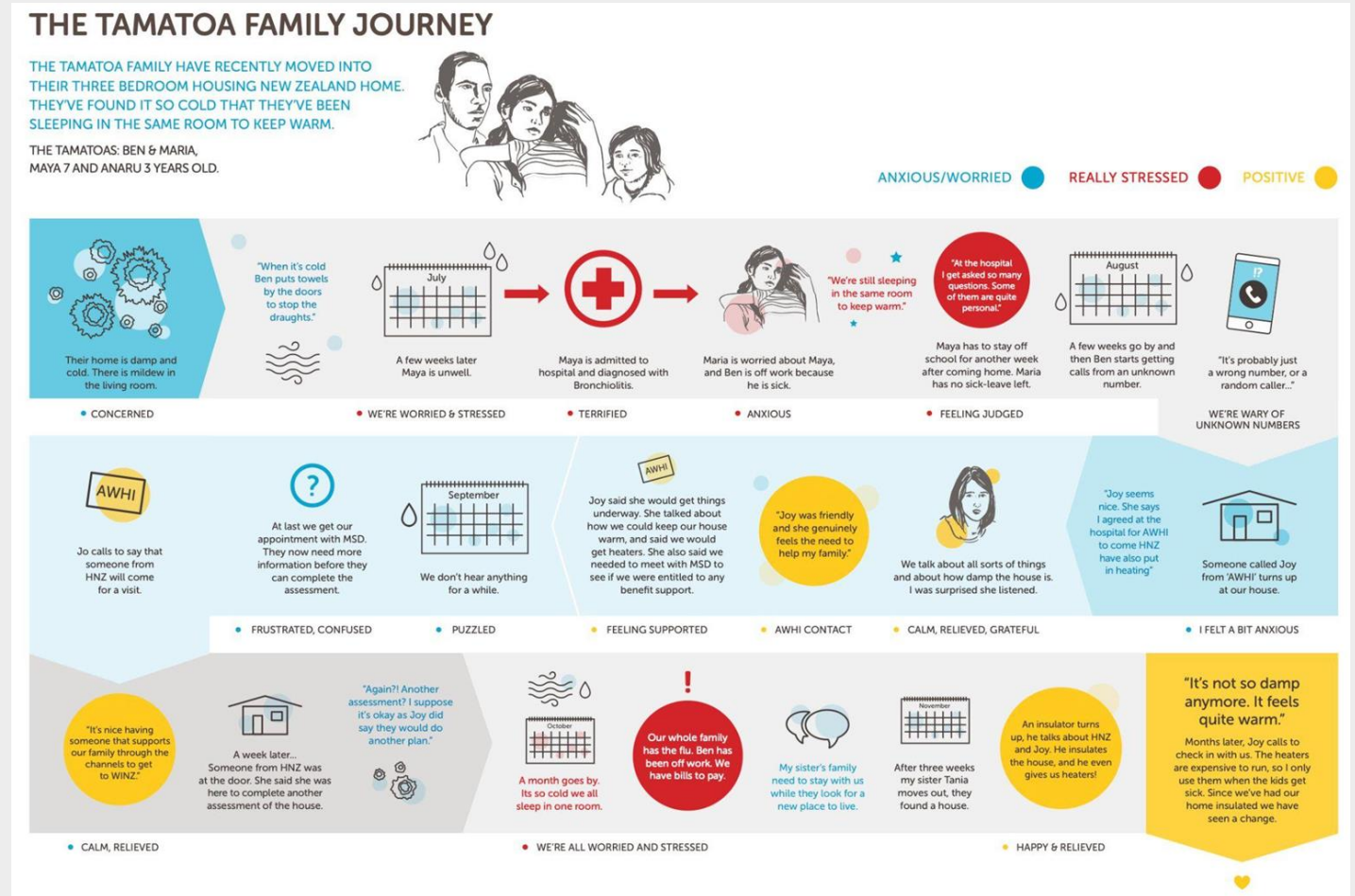
- Implications of **audience heterogeneity** and **need for flexibility**
- Effectiveness = person, context, business specific
- Changing the Behaviour Changers
- Working with new HTR groups
- In-depth vs. lighter touch
- **Trusted Middle Actors** - single point of contact, expertise, trust, co-design
- Behavioural theory vs. real world insights/experience
- Collaboration essential - stronger interagency working
- The power of the extra 'stuff'
- Evaluation - doing more of it and making the most of what we know





# Common engagement strategies

- Using **trusted Middle Actors**, often community providers, to recruit & implement strategies
- Commonly, these MAs were then **trained** in specific energy or home performance advice
- **Face-to-face** and **in-home** advice was seen as more successful than any other strategies
- **Energy efficiency** was often not the primary driver when communicating messaging

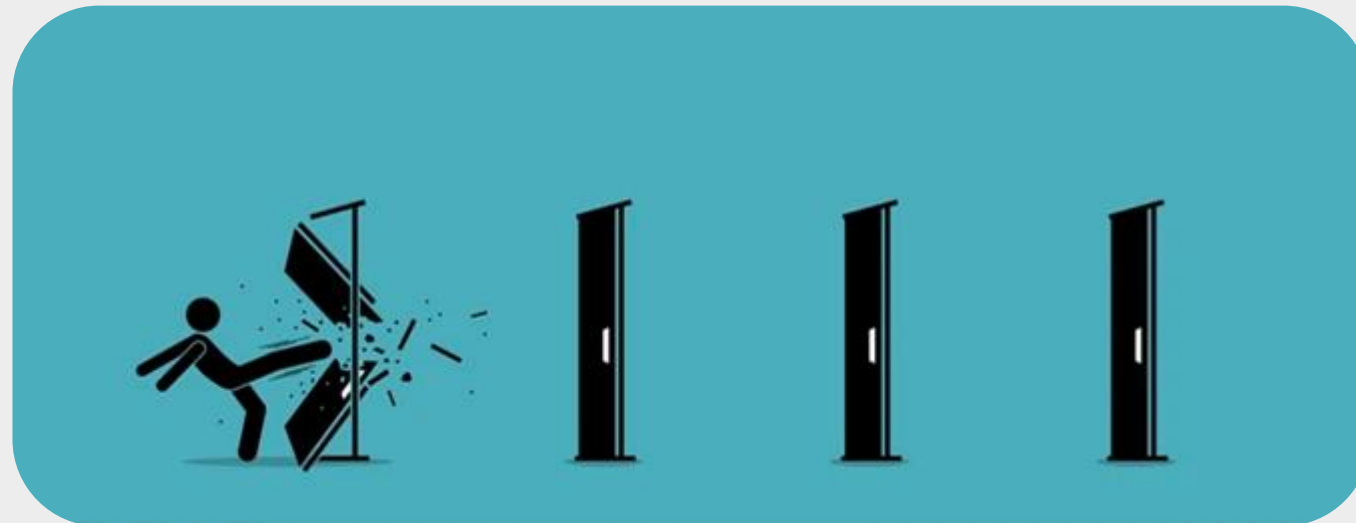


Example: Journey Mapping exercise of vulnerable whānau in Aoetaroa (Source: HHI - TSI, 2016)



# Main barriers

- **Identifying and recruiting** households and small business owners
- Trusted MAs were also often **hard-to-reach**
- **TRUST** is one of the biggest barriers
- **Low-income ≠ vulnerable ≠ hard-to-reach**
- Make sure energy-saving advice doesn't undermine **health** in vulnerable households
- SMEs are extremely **heterogeneous**, one size doesn't fit all
- For SMEs, **market barriers and failures** and a **lack of strategic approach**





# Top recommendations to policy makers and programme managers

- Build ongoing **trusted relationships** with community Middle Actors
- Use **co-design** principles with multiple stakeholders
- Dedicate the **correct budget** to compensate MAs
- **Empower and train** them
- Clearly **define your target audience** and
- Tailor target **behaviours to their needs**
- Use **simple communications** methods
- Use **behavioural science** to inform your messaging but
- Mostly rely on your MA's **practical knowledge of their clients**
- **Pilot - prototype - test** if you can before roll-out
- **Evaluate** (process, outcome and impact), and
- **Reiterate** where needed
- Tell **stories** and highlight **non-energy benefits**
- In terms of policy, dedicate **specific energy efficiency and renewable energy policies** to vulnerable consumers and SMEs.



# What's next with the HTR Task?

- Cross-Country Case Study Analysis (Mundaca et al, *in prep*)
- Two eceee Summer Study papers (CSA methodology & A-NZ HEAT Kit pilot)
- Year 3 Field Research Pilots:
  - **Aotearoa New Zealand:** *Home Energy Assessment Toolkit* (HEAT kits) package of interventions aimed at HTR and most vulnerable whānau
  - **Canada / BC Hydro:** Empathy training of home energy advisors from LI programme
- Participating Country Reports





Hard-to-  
Reach Energy  
Users

# Questions? Comments? Feedback?

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





Hard-to-  
Reach Energy  
Users

# Thank you very much for your attention!

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

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

Check out our project: <https://userstcp.org/task/hard-to-reach-energy-users/>

